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Reboot

The Big Mouth Guide

Vocal Production
Special

Stuart Epps &
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Pro Tools® 11

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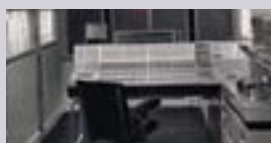
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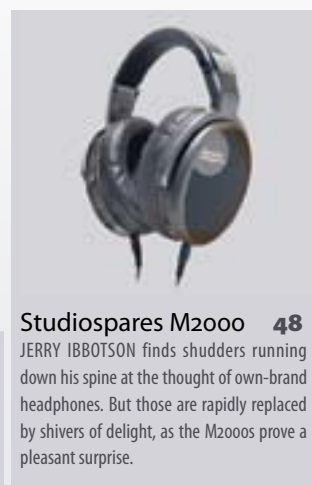
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In the first of a two-part look at channel transmission and delivery, KEVIN HILTON examines play-out and automation as part of the process of getting a television programme from the TV studio or live location.

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Gore and messy shocks were the name of the horror game in the early 1970s, but Shaffer brought a new approach with *The Wicker Man*, using mind games and a twist on the truth to bring about a startling, unsettling atmosphere.

As an industry, we have a notion of value in our tools that has suited both sides of the equation for some time now. Competition is certainly a good motivator for lower prices, but it is also true that if everybody is selling their widgets for £1,000, why would anyone want to sell theirs for £500? If the market passively approves a value (simply by not questioning it) then the value will stand.

On the other hand, a high-ticket price on a product has actually suited studios in the past. If a studio has a piece of kit that is inaccessible to the average individual, then the studio has some exclusivity – a reason for being. In turn, if a big studio owns a piece of kit, then that piece of kit gains kudos. It becomes an aspirational purchase – even for other studios.

At this point, research time, man-hours, manufacturing and component costs, distribution overheads, and dealer margins become irrelevant. It's all about a perception of value.

An established value then, slightly perversely, assigns value to other things. It's impossible for the £500 widget to be as good as the £1,000 widget, surely? So the next manufacturer might consider charging £1,500 for their widget, banking on the consumer to come to the wrong conclusion.

Is there anything that can be done about this? Not in an active sense. An established value is just that, and difficult to shift. There are instances where a manufacturer has made genuine innovations in process and cost, and put a product into the market with a literal value, only to have that product fail because the market refuses to believe it can possibly be as good as the more expensive products.

For the most part I know that our industry's reputable manufacturers would not exploit this cynically or maliciously. Also, it's worth remembering that if mechanical value were applied to the product of the studios – the media – then the industry would certainly be poorer. Our products are dominated by creative value; mechanical value is tiny.

Therefore, it must be fair for our tools to have creative value as well – something that transcends overheads. I think I've just come full circle.

Ah no... there is a point to this. There's a big difference between creative value and a rip-off. The trick is in recognising the difference.

Paul Mac, Editor



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AUDIOMEDIA

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AUDIO MEDIA (Europe), Suite L16, South Fens Business Centre,
Fenton Way, Chatteris, Cambs, PE16 6TT

Telephone: +44 (0) 1354 669960 – Facsimile: +44 (0) 1354 669965

General E-mail: mail@audiomedia.com – Press Release E-mail: pr@audiomedia.com

Managing Director/Circulation

Angela Brown

a.brown@audiomedia.com

Publisher

Steve Connolly

steve.connolly@intentmedia.co.uk

Editor In Chief

Paul Mac

p.mac@audiomedia.com

Tel: +44 (0) 1223 911380

News/AMSR Editor

Jo Fletcher-Cross

jfcross@audiomedia.com

Tel: +44 (0) 1223 911133

Production Editor

Lanna Marshall

lmarshall@audiomedia.com

Tel: +44 (0) 1223 911639

Design & Production Manager

John-Paul Shirreffs

jp.shirreffs@audiomedia.com

Tel: +44 (0) 1223 911415

European Sales Director

Graham Kirk

g.kirk@audiomedia.com

Tel: +44 (0) 1223 911224

US Sales West Coast

Janis Crowley

jcrowley@nbmedia.com

US Sales East Coast

Paul Leifer

pleifer@media-sales.net

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Simon Campbell

Head of Technical Services, Abbey Road Studios



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The Pro Sound Awards 2013

Lobbying is open - get your entries in!

Launching this year, the Pro Sound Awards recognise and celebrate the commercial and creative successes of the entire pro-audio industry – from engineers and tour managers, to equipment marketers and event producers.

The nominees for the awards will be selected from lobbying entries. Anyone can enter, and there is no charge to do so. All you have to do is select the most relevant award to you or your project then email a short pitch (not more than 300 words) to prosoundawards@intentmedia.co.uk

Based on the email nominations, the Pro Sound Awards team will create a list of finalists for each category. This process involves looking at the performance of those nominated companies over the past year, plus the information provided by the lobbying emails.

A shortlist of finalists for each category will be presented to a large panel of judges from across the spectrum of the pro-audio industry. These judges ultimately will choose the winners of each Pro Sound Award (with the exception of the Grand Prix and Lifetime Achievement).

The event will take place on 19th September 2013 and will be held at the Ministry of Sound in south-east London. An exclusive After Party will also be held at the world famous club.

There are 12 awards across the Studio, Live/Touring, Installed Sound and Broadcast Audio sectors alongside the Marketing Initiative of the Year, Grand Prix Award, Lifetime Achievement, and Rising Star.

Make sure you're in attendance for what promises to be a truly memorable evening for everyone in the business of professional audio!

Headline sponsors already confirmed for the awards are DiGiCo, Sennheiser, Focusrite Novation, and Finline Media Finance.

The awards categories are as follows:

LIVE/TOURING SOUND

• Engineer of the Year • Tour Sound Production • After-sales service

STUDIO

• Engineer of the Year • Recording Production of the Year • Studio of the Year

INSTALLED SOUND

• Team of the Year • Permanent Installation Project of the Year • Temporary Installation Project of the Year

BROADCAST AUDIO

• Team of the Year • Facility of the Year • TV Sound Event of the Year

SPECIAL AWARDS

Marketing initiative /campaign of the year • Rising Star • Lifetime achievement • Grand Prix (Chosen by Pro Sound Awards)

For more information on the categories, tickets for evening itself, sponsorship and everything else, visit www.prosoundawards.com



Don't forget to check out our website. You can keep up to date with industry news, whatever your particular interest – you'll find recording, post production, broadcast, live sound news, and events. There are features about all aspects of audio, and blogs from a variety of contributors. Available for download from the website are our very useful indeed International Buyers Guides, each focused on a specific area of technology; and back issues of Audio Media itself. Come and visit us at www.audiomedia.com.

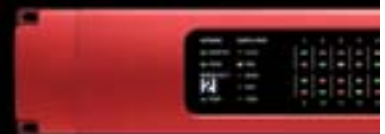
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*Shipping Q2 2013



d&b audiotechnik revealed the latest addition to the V-Series, a complete range of Vi installation loudspeakers, at PL+S. The Vi additions, Vi8, Vi12, and Vi-SUB all conform to the existing V-Series loudspeakers technical performance, but have simplified rigging and electrical connections. The Vi8 and Vi12 loudspeakers are three-way passive designs housing two 10-inch LF drivers. The Vi-SUB is an actively driven cardioid subwoofer powered by a single d&b D12 amplifier channel. d&b also revealed ArrayCalc V7, which allows the user perform acoustic simulations with a number of d&b point source loudspeakers.

www.dbaudio.com

Sonnet has announced the Echo Express III-D desktop and Echo Express III-R rackmount Thunderbolt-to-PCI Express Expansion Chassis. Both enable the use of a wide variety of high-performance PCI Express cards with any Mac computer with a Thunderbolt port.

www.sonnettech.com

Genelec Gets Back To Nature

Genelec has debuted its new M Series Bi-amplified Active Monitors at Prolight + Sound 2013. The first two models being introduced are the Mo30 and Mo40 Bi-amplified Active Monitors, which employ a Natural Composite Enclosure (NCE) manufactures for Genelec in Finland from wood fibre and recyclable material. Both models utilise a Laminar Integrated Port (LIP) for accurate low frequency response and minimising enclosure vibration. The M Series models feature new class D amplifiers developed in-house by Genelec's R&D/engineering team. The Mo30 features a five-



inch woofer and 0.75-inch metal dome tweeter, powered by a 50-watt and 30-watt amplifier respectively. The Mo40 employs a 6.5-inch woofer with a one-inch metal dome tweeter, powered by an 80-watt and 50-watt amplifier respectively.

www.genelec.com

SSL, Stage Right?

SSL created a storm at ProLight + Sound this year by launching its first ever live sound console based on the new Tempest technology platform. The SSL 'Live' is a digital console that has been in development for two years. The headline numbers include 976 inputs and outputs, and 192 full processing audio paths at 96kHz. How those paths are configured is extremely flexible, with power allocated to Channels, Auxes, Stem Groups, and Masters configured to suit the needs of each show. All processing is built into the console surface and it has a collection of I/O connectivity built into the frame. A full range of Stagebox I/O connects to the console via MADI with the potential for larger systems to make use of SSL's own Blacklight technology that carries up to 256 channels of bi-directional audio and control via a single fibre connection.

Live also features SuperAnalogue mic pre-amps, 24-bit/96kHz A/D D/A conversion, to 64-bit internal processing and 96kHz operation throughout. It comes with a collection of 30 new effects and audio analysis tools, which take SSL's studio-grade processing and re-craft it for live.

Antony David, Managing Director at

SSL said: "...We like to get things right at SSL and we are very confident that we have created a console engineers will fall in love with. It is very exciting to be entering a completely new area of the industry, with a new technology platform and a fresh approach to how a live console should sound and how to give engineers a control surface that helps them deliver exceptional performances. We are really looking forward to how the professional live sound community reacts."

Live is due to ship in September 2013, and the cost is expected to start at around £48,000 and increase depending on configuration.

Also new from SSL was the Stereo Bus Compressor for 500 format modular racks. This unit features the centre section compressor from the 1980's G-Series analogue console and according to SSL, "It is a simple unit with a simple purpose; it makes complete mixes sound bigger, with more power, punch, and drive. It brings cohesion and strength to your mix without compromising clarity."

www.solidstatellogic.com

"The headline numbers include 976 inputs and outputs, and 192 full processing audio paths at 96kHz."

Adobe On The Radar

TC Electronic has teamed up with Adobe to integrate its LoudnessRadar in the next versions of Adobe Premiere Pro and Adobe Audition on a license agreement.

"Loudness compliance is a key requirement for content creators today and moving forward," said Simon Williams, Director of Strategic Relations at Adobe. "Our Adobe Premiere Pro and Adobe Audition users will be able to have access to an innovative and easy-to-use loudness monitoring solution."

"By adding the LoudnessRadar to the Adobe Premiere Pro toolset, Adobe has made it easy for video

editors to get audio standards compliance right. The audio target is always in sight, and it's easy for all to balance speech consistently against background sound and foreground music," says Thomas Lund, HD Development Manager at TC Electronic.

www.tcelectronic.com
www.adobe.com

SPL Sees Crimson

Analogue and digital audio processor developer and manufacturer SPL has launched its Madison 16+16 channel studio



Form A Qu

Allen & Heath has unveiled Qu-16, a brand new compact digital mixer. The 19-inch rack size mixer inherits technology from the GLD and iLive digital mixing systems, and features total recall of settings (including 17 motorised faders and digitally controlled preamps), an intuitive touchscreen, Qu-drive integrated multi-track recorder, dSNAKE for remote I/O and personal monitoring, multi-channel USB streaming to Mac, Qu-Pad control app, and iLive's FX library.

Qu-16 offers 16 mic/line inputs, three stereo inputs, four FX engines with dedicated stereo returns, 14 mixes (including LR, 10 aux mixes, plus two dedicated FX busses), 12 mix processing channels, patchable AES digital output with a further two-channel ALT output, dedicated talkback mic pre input and two-track output.

The mixer has five high speed dual core DSPs, which provide comprehensive channel and FX processing, with room for future processing updates and functionality. There are five 200MHz ARM core processors that run in parallel, one to drive each of the touchscreen and surface, the Qu Drive USB interface, USB streaming, Ethernet port, and the moving faders.

The full colour touchscreen features 'Touch Channel' access to channel processing, the FX racks, and all the set-up and system



management controls. The SuperStrip provides control knobs for a selected channel's key processing parameters, such as gain, HPF, parametric EQ, gate threshold, compressor threshold, and pan.

Qu-Drive, the mixer's integrated USB recorder, which works with an external USB drive, can record and playback multi-track and stereo audio .wav files. The USB interface can also be used to store scene and library data for archiving and later recall.

A free iPad app connects to the mixer via a Wi-Fi router plugged into the Ethernet control port and gives instant wireless control of the mixer's key parameters and settings.

www.allen-heath.com

"The 19-inch rack size mixer inherits technology from the GLD and iLive digital mixing systems..."

Fohhn Audio has launched two new 12-inch high-powered subwoofer models. The XS-22 active sub is a new addition to the X-Series compact subwoofers, and features a 12-inch long excursion speaker, integral 1500W Class D digital amplifier, and Fohhn Audio DSPs. It weighs 26kg and has a maximum SPL of 127dB. The new PS-22 active/passive subwoofers augment Fohhn's Perform Series and are particularly suitable for flown applications that involve beam steering.

www.fohhn.com



Lawo launched the full version of JADE, its new PC-based audio control centre, at the PL+S and NAB shows. It allows the user to employ all audio signals on a Windows PC simultaneously, without limitations; and also integrates the RAVENNA audio-over-IP network technology. This means all local audio signals in the IP network are available and from there can be used through JADE at local workstations. Remote control and automation options make it possible to operate JADE remotely from other devices, such as Lawo radio mixing consoles.

www.lawo.de

>



One twotwo

PMC was at the Prolight + Sound show to launch the latest model in its twotwo series. twotwo.8 is the flagship model of the range, and is the largest, with an eight-inch bass driver and substantial ATL cabinet. It is manufactured in proportion with the smaller models, the twotwo.5 and twotwo.6. In this way, the front baffle is kept as narrow as possible, minimising the effect of baffle colouration and ensuring sharp imaging. It has a maximum SPL of 115dB, and features analogue phono and XLR inputs plus and AES3 digital input. The twotwo series models can operate in either vertical or horizontal orientations without compromising stereo imaging or tonal accuracy.

www.pmc-speakers.com



DiGiCo Gets More Theatrical

DiGiCo used the PL+S show to introduce its new SD Ten Theatre

digital mixing console, a theatre specific counterpart to the SD Ten. The SD Ten provides 96 channels of full processing – 12 of which are full Flexi channels – and 48 assignable busses. The Theatre software upgrade provides essential tools for programming and running a theatre production, including the Auto Update system to aid cue programming, Channel Aliases, the new Players update function, and matrix nodal delays. When multiple actors are playing the same role, the Players feature takes care of populating the show with that person's unique channel settings – their EQ, filters, dynamics, etc.

Also announced was the increase of the SD9 and SD11 console's sample rate to a maximum 96kHz. The SD9 and SD11 can also now be specified with a fibre optic connection straight from the factory.

www.digico.org

New beyerdynamic Offerings

beyerdynamic has launched several new products at Prolight+Sound 2013. The new TG 1000 digital wireless



microphone system has a bandwidth of 319 MHz, covering a UHF frequency range from 470-789MHz, enabling it function worldwide and giving enough clearance to bypass interference from other users. It features the beyerdynamic TriplePlay Codec, which enables latency times of 2.1ms; and has a range of up to 300 metres. The system offers five different interchangeable microphone capsules.

The company also launched a special edition of the DT 770 Pro headphones, specially optimised for use with portable devices; and presented its free Virtual Studio software plug-in, which allows users to simulate various listening spaces and their speaker set-ups using headphones.

www.beyerdynamic.com

I/O system and Crimson USB audio interface and controller at Musikmesse 2013. Crimson combines a USB interface with high-quality pre-amps and a separate, fully-featured monitor controller. It offers 30 I/O channels (10 recording and 20 playback); two discrete Class A mic pre-amps; two Hi-Z instrument pre-amps; two separate headphone amps, which are individually controllable; dual stereo speaker set connections and control; monitor signal mix function; MIDI input and output; plus USB 2.0 and S/PDIF input and output.

The Madison 16+16 channel studio I/O system features a built-in MADI port offering digital transmission of up to 64 inputs and outputs with galvanic insulation - via four units connected on a single MADI port.

www.spl.info



Total Eclipse

Clear-Com has debuted the newest addition to its line of Eclipse HX Digital Matrix Systems at Prolight+Sound 2013, the Eclipse HX-Delta Matrix Frame. The Eclipse HX-Delta provides two CPU cards for redundant system control, with the option of up to four variety I/O frame cards and up to three interface modules in a 3RU frame. This gives users the option to build a distributed matrix system, rather than installing large system frames in just one location.

"...the newest addition to its line of Eclipse HX Matrix

Also launched at the show was version 1.1 of the Helixnet Partyline Intercom System. Included in the new product release is a system-linking capability, allowing users to extend their digital partyline intercom communications over a network to multiple production spaces. Also included is the ability to link up to five HMS-4X Main Stations via Ethernet and

support up to 100 HBP-2X digital belt packs. The linking function significantly expands the channel count on intercoms, with up to 20 partyline channels and five programs available for selection by dialing up the channels needed on the belt pack. Up to five Main Stations can be connected via the new HL1-ET2 Ethernet Module in HelixNet's station-to-station networking. The Main Stations can connect directly over fibre or through a LAN using standard IT switches. A new HLI-FBS Fibre Module is also available for linking stations over long distances.

The company also announced enhancements to its Tempest Digital Wireless Intercoms, including a Remote Line Extender, which increases the system's cable run distance of a remote antenna by 3,000 feet with one Line Extender, or 2,000 feet per Line Extender if using more than one. A total of three Line Extenders can be connected to provide total coverage of up to 7500 feet.

www.clearcom.com

Minnetonka Audio featured the latest version of its flagship product AudioTools Server (ATS) 2.5 at NAB 2013. Enhancements include integrated failover protection; MP2, MP3, and AAC encoding; and a new queue-based monitoring application. Minnetonka also released a new version of its SurCode encoder/decoder for Dolby Pro Logic II. It offers complete, Dolby-certified encoding and decoding of up to eight channels of audio. www.minnetonkaaudio.com

Emotion Systems launched eFF 3.0 at NAB 2013 in Las Vegas, the latest incarnation of its audio loudness compliance and normalisation application. eFF 3.0 features Dolby E, True Peak, Short Term and Momentary Correction using its DNA (Dynamic Normalisation Algorithm) and loudness range control. It also provides multi-profile loudness correction within a single file for multi-language, international delivery requirements; and provides enhanced, automated operation with its improved multi-watch folder capability and its extended RESTful API.

www.emotion-systems.com

Hooked In To AKG



AKG launched its new C111LP earhook microphone at PL+S in Frankfurt, aimed at onstage performers and corporate speakers. Constructed from stainless steel, it has a pliable, strong frame which can be adjusted to fit the head of any performer. It features a small skin-coloured boom and weight just 7g. It connects to all AKG pocket transmitters via three-pin mini XLR for easy integration.

The company also chose PL+S to launch its new K612PRO and K712PRO Reference Headphones. The K612PRO is an open-back, circumaural dynamic headphone. It has a self-adjusting, glove-leather headband with aluminum arches and solid rivets. The K712PRO is a

new top-of-the-line reference headphone. It features an open-back design, three dB improved low-end performance, flat wire voice coil and a detachable professional cable.

www.akg.com

Mini Martin

Martin Audio launched its new MLA Mini at the Prolight + Sound show. Each MLA Mini enclosure houses two 6.5-inch voice coil LF drivers and a vertical column of three 1.4-inch aluminium dome HF drivers on a 100-degree horizontal dispersion horn.

The MSX mini-sub power plant complements the main system and houses the amplification, networking and DSP necessary to power and control itself and four MLA Mini enclosures. The system can be flown, ground-stacked, or pole mounted. The 15-inch reflex loaded MSC can be integrated into flown arrays or ground-stacked



separately. MSX also contains nine channels of Class D amplification to provide cellular drive, while the onboard DSP interacts with proprietary DISPLAY2.1 intelligent software for accurate array optimisation.

www.martin-audio.com

Riedel Levels App

Riedel Communications has announced the release of the Artist Level Meter app for iPad. By monitoring and controlling up to eight freely assignable audio inputs of an Artist digital matrix intercom system, the iPad app allows the intercom administrator to manage the four-wire input levels of an Artist system from anywhere. The Artist

Level Meter app complements Riedel's Artist Director configuration software, a full-fledged management system that runs on PC systems and provides comprehensive access, set-up, and control of any aspect of an Artist system. When administrators are away from the computer, the iPad app gives them wireless access and configuration capabilities.

www.riedel.net

K.M.E. Co-Ax

K.M.E. has presented its new MCX 15 coaxial high performance monitor with low profile casing design enables two set up options – with a flat angle of 35 degrees for monitoring near to short distances, and a steep angle of 55 degrees for longer distances. It also launched the direct-radiating subwoofer QLB 118 X, which is equipped with a newly developed 18-inch subwoofer with tetra coil and dual voice coil. The tunnel design of the bass reflex casing has been optimised to minimise airflow noise. Also on display at PL+S was the LV 2 i, a professional, ultra-compact small speaker system, designed for music and speech reproduction.

www.kme-sound.com



Surround Dynamic Control?

The AAX compatible Oxford Dynamics plug-in from Sonnox has all the control you'll need.



www.sonnox.com

Sonnox

TC-Helicon Teams With Sennheiser



"The second generation features a completely reworked user interface, unique real-time control, and new effects."

TC-Helicon has launched two new vocal effects solutions, the VoiceLive Touch 2 voice processor/looper and the Harmony Singer vocal stompbox, both of which offer full compatibility with Sennheiser's evolution e 835 fx microphone. New bundles announced earlier this year are also now available, combining the evolution e 835 fx with

TC-Helicon's VoiceLive Play vocal effects unit for singers, or the VoiceLive Play GTX for singer/guitarists.

VoiceLive2 updates VoiceLive Touch. The second generation features a completely

reworked user interface, unique real-time control and new effects.

Kevin Alexander, CEO of TC-Helicon, said: "Working alongside Sennheiser we can offer even more to singers. With a best-selling professional stage mic fully compatible with our effects units, there is an ease of use and immediacy that pushes the limits of performance even further – to what an artist can imagine rather than what the technology allows."

Sennheiser has also announced the latest release of its Wireless Systems Manager software. Wireless Systems Manager 4.0 assists users in setting up and co-ordinating the frequencies of wireless microphones and personal monitors by having the most important parameters displayed on a single screen. The software also gives a detailed overview of the spectrum, of blocked channels, of the devices to be integrated into the set-up, and of the reliability of selected frequencies.

www.sennheiser.com

Omnia has showcased its Omnia Direct fully digital composite interface at NAB 2013. It will initially be available in the Omnia.11 and Nautel NV series transmitters. With the Omnia Direct interface, a single AES/EBU cable between the Omnia 11 and the Nautel NV Series transmitter carries the baseband signal in digital for. This 100% digital path eliminates the noise and distortion of A/D converters and reduces potential overshoots.

www.omniaaudio.com

Zynaptiq introduced two new plug-ins at the Frankfurt Musikmesse. Unchirp is a real-time plug-in that removes artifacts associated with low bit-rate lossy audio encoding, de-noising, and other processes that operate in the frequency domain. Unfilter is a real-time plug-in utilising a blind de-convolution process to remove filtering effects, such as comb filtering, resonance or excessive equalisation. Unfilter also removes slow moving flanger/chorus effects, and can apply a detected filter response to another signal, or store it for later use.

www.zynaptiq.com



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RTS has launched its OMNEO-compatible RTS intercom matrix products at NAB 2013. The new RTS ADAM OMNEO interface cards transform the RTS ADAM intercom system into a flexible, IP-based, AVB-compatible intercom network. It allows ADAM intercom systems to be deployed over any standard IP-based network. The product range consists of the RTS ADAM OMNEO card for the ADAM and ADAM-M intercom frames and a user station interface card for select RTS keypanel models. Both these cards fully update the connectivity of these RTS intercom products to be fully IP compatible.

www.rtsintercoms.com



RME has updated the digital MADI converters of its premium line, announcing five new products in a new design: the new MADI Router, the ADAT Router and ADAT Converter, and the AES3 Router and AES3 Converter. All five products have the new RJ45 connector for MADI. Also announced was the MADIface XT, the world's first USB 3.0 audio interface. The device has three MADI ports, each carrying up to 64 audio channels, and additional connectors for microphones, line levels, AES/EBU, MIDI, and headphone signals, as well as an RME USB 3 chip. It is also downward compatible to USB 2.

www.rme-audio.de

Audient unveiled its new recording interface at PL+S. iD22 features two-in, six-out + ADAT I/O with high performance 24-bit/96kHz AD/DA converters, and professional, console-like monitor controller functionality. It features a main stereo output for critical listening with fully balanced outputs; an alt stereo output for alternative loudspeakers and cue mixes; a headphone amplifier with independent DA converter; and three programmable function keys to facilitate control over talkback, loudspeaker switching, sum to mono, polarity reverse, and cue solo listen.

www.audient.com

Soundcraft has announced a substantial new software update for Vi2, 4, and 6 consoles. Version 4.8 software contains a number of significant new features. Vi1 users also benefit from some of the new features, using the same update file, downloaded free of charge from the Soundcraft website.

The most significant of the new features is the upgrade of the bussing system on Vi2, 4, and 6 to allow all 32 of the console's mix busses to work in stereo mode when required – without stealing any other busses to use as in-ear mixes. This doubles the stereo mix capacity of the consoles.

www.soundcraft.com



Electro-Voice has launched the new ZLX loudspeaker series, which comprises two powered models, ZLX-12P and ZLX-15P, and their passive counterparts, ZLX-12 and ZLX-15. They are equipped in each case with 12-inch and 15-inch woofers, respectively, a 1.5-inch titanium HF driver, and in the case of the powered models, a 1000W (peak) Class-D power amplifier. The design includes a patented 'split baffle', which offers improved acoustic dispersion.

www.electrovoice.com



Four Audio has launched two new products at PL+S. The first is the DBS1, a two channel breakout box built on Audinate's new Dante Ultimo solution. Its metal housing is smaller than 9.5-inches and features two balanced symmetrical analogue inputs with programmable sensitivity, switchable phantom power, a low cut filter and 118 dB dynamic range.

The company also made available two new configurations to its DBO1 breakout box. The DBO1 is a Dante enabled breakout box with eight analogue outputs and optional four AES outputs. The new configuration will offer four balanced symmetrical analogue inputs and either 48V phantom power or ICP constant current supply.

www.fouraudio.com

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Wavelab Renewed



Steinberg has announced its latest version of its audio editing and mastering software, WaveLab 8, which offers new speaker management, loudness metering, and processing, and plug-ins from iZotope, Voxengo, and more.

WaveLab's new speaker management system provides flexibility with up to eight loudspeaker configurations. Also, the addition of loudness metering for momentary, short-term and integrated values, true peak support, and

"...a better user interface designed for user operation..."

enhanced loudness and batch processing tools all meet EBU R-128 standards.

The MBIT+ master dither has been developed by the engineers at iZotope and now

features a more sophisticated set of word-length reduction algorithms for dithering and noise shaping. The second plug-in highlight is Voxengo's linear-phase spline equaliser, Curve EQ, which matches and transfers a spectrum's shape from one recording to another. Additional new plug-ins include Steinberg's Brickwall Limiter and Tube Compressor.

There are also workflow improvements:

a better user interface designed for easy operation; a new master transport panel to expedite navigating through a project; single-window plug-in management that enables users to sort plug-ins by manufacturer; and Audio Montage now offers a new master plug-in section for local storing of plug-in chains alongside SuperClip capability to combine multiple clips.

WaveLab 8's editing tools facilitate the audio editing in a number of ways: volume clip handles with raise selection adjusts levels of individual selections; Track Lock prevents accidental modifications; there are new trim and split options; auto-replay; and improved processing via key commands.

Steinberg has also released WaveLab Elements 8, a smaller and more affordable version of WaveLab 8 that will feature Brickwall Limiter, Tube Compressor, a new transport panel, enhanced editing tools and track effects, as well as an enhanced Audio Montage, metadata support, and quality waveform resolution.

Both products are available now from authorised resellers and through the Steinberg Online Shop.

www.steinberg.net

Nugen Audio has revealed MultiMonitor, its new standalone software program that enables users to monitor loudness on 16 simultaneous channels. Applications range from live TV or radio broadcasts to complex post-production mixes, and it can measure up to 96 audio inputs in mono, stereo, or 5.1 surround sound in a single window.

www.nugenaudio.com

Fairlight and DTS Inc have joined forces to create Fairlight's new 3DAW



audio production platform with native MDA mixing and format support. 3DAW enables sound designers to mix object-based audio in unrestricted 3D space, monitor on any configuration; and output in DTS' proposed future specification, MDA. It features on-screen 3D panning as well as extensive monitoring functions, and can generate stereo, 5.1, 7.1, 9.1+2, or DTS Neo:X mixes.

www.fairlight.com.au



Apollo 16 Is Go

Universal Audio has unveiled its latest audio interface, the Apollo 16, which boasts 16x16 analogue I/O and is FireWire/Thunderbolt-ready.

Apollo 16's professional DB-25 connectivity and multi-unit cascading for up to 32 x 32 analogue I/O is, according to the manufacturer, enough to set a new standard in high-resolution recording with classic analogue sound.

Analogue circuit design, high quality converters, and DC-coupled outputs provide low THD and a high dynamic range; and the onboard UAD-2 QUAD processing allows for real-time processing with UAD Powered Plug-Ins, with sub-2ms latency. Recordists can monitor, audition, and 'print' audio through analogue emulations from Ampex, Lexicon, Neve, SSL, and Studer.

Its routing capabilities include

four stereo cue mixes with individually assignable.

www.uaudio.com



Neumann's Newest

Neumann recently announced the launch of its new active studio monitor, the KH 310 A. The three-way system is based on newly developed drivers housed in a sealed cabinet to provide accurate reproduction over the entire frequency response.

The KH 310 A is somewhat multipurpose, Neumann claims: as a near-field for mixing and mastering; as a front loudspeaker in medium-sized surround systems; or as a rear loudspeaker for larger multi-channel systems.

The bass driver provides an accurate response down to 34Hz and provides a very fast transient response; the mid-frequencies are reproduced by a dedicated

soft dome mid-range driver; and the high frequencies are handled by an alloy fabric dome in an elliptical Mathematically Modelled Dispersion waveguide.

Its three class-AB amplifiers and high-capacity SMPS power supply deliver plenty of headroom with no audible distortion.

www.neumann.com

RND Shows Centrepiece

The new 5060 Centrepiece 24 x 2 desktop mixer from Rupert Neve Designs is aimed primarily to deliver the quality of the 5088 mixer in a compact, modular framework, the manufacturer says.

Its modular, hybrid analogue/digital mix system allows gear to be integrated with the mix-bus; the 5060 integrates stem outputs from the DAW with the rest of the control room, sums the final mix, and provides two-track outputs, source selection, and



multiple speaker feeds from the monitor section.

With its custom transformers, a class A mix buss and variable Silk, the 5060 can also provide a wide range of tone: for a rich feel, the mix buss can be driven hard and Silk/Texture can be implemented in two different transformer saturation modes; and for clear tone, Silk can be disengaged entirely.

www.rupertneve.com

Sony DWZ Expands

Sony has made two new additions to its DWZ series digital wireless audio products, designed to suit both amateur and professional musicians: the DWZ-B50I and DWZ-B50GB.

The DWZ-B50I is designed to suit wind instrument musicians, and features the ECM-GZ1UBMP cardioid condenser microphone with a flexible gooseneck two-way clip for trumpet, saxophone, or other wind instruments.

The DWZ-B50GB features the robust ZRX-HR50 metal body rack-mountable receiver and Cable Tone Generator, and is suited for guitarists and bassists who use rack-mount cases.

www.sony.co.uk/pro

Moscow Build For NTV-Kino

The NTV-Kino film company has up the first Dolby Atmos studio in Russia. The studio is set within a new 1,500 square metre studio complex. The complex is owned by the NTV-Kino film company, a member of Gazprom-Media Holding, and is located in Moscow on land previously occupied by the Gorky Film Studio. From design to completion the construction took one and a half years.

The acoustic design of the complex was planned by acoustician and designer Philip Newell. Equipment selection for the sound studios was provided by well-known European consultant and sound designer Branko Neskov. The selection of video equipment and its installation was arranged by post-production specialist Oleg Gorchakov.

The sound side of the new complex consists of seven studios: a Foley studio, three ADR studios, two editing rooms, and a Dolby Premier certified dubbing theatre with Euphonix System

5, supporting all formats, including the new Dolby Atmos object-based sound format.

The rest of the NTV-Kino complex incorporates five video editing bays, a digitising room, CGI/VFX, and a large colour balance (colour-correction) room, equipped with DaVinci Resolve and BaseLight Four systems. The colour balance room doubles as a screening room, with 3D video and 5.1 (7.1-compatible) sound. The video editing rooms all accommodate the AVID Media Composer platform.

All workstations of the complex are interconnected within one media network through the central AVID ISIS media-server, which provides premier data security standards. This system allows the control of the work-space from all editing rooms.

The first project in the new dubbing theatre is a full-length film with working title *Alien War*, about the fate of the Soviet military who fought in Vietnam. It is directed by Alexander Chernyaev,

and based on *Vietnamese Cocktail* by Victor Ledenev.

Alexander Chernyaev, the General Director of NTV-Kino, commented: "The post-production complex is only the beginning of a greater project. Soon we will start the construction of a large shooting stage and audio recording facility. The possibility to marry creativity with cutting-edge technology makes us confident about the future."

www.ntvkino.ru

Wise Buddah Studios has appointed a new dubbing mixer and is upgrading a second sound suite to 5.1 after seeing an increase in high-end TV audio post-production work. Former Pinewood Studios Mixer James Doyle has been added to its roster of sound engineers while an overhaul of Studio 3 will see a new Avid C24 control surface installed along with 5.1 monitoring, a dedicated Foley area, voiceover capabilities, and improved acoustics. The move signals the start of a 24-month process – to be managed by Senior Engineer Jon Last – that will see the whole of Wise Buddah's central London facility upgraded.

www.wisebuddah.com

The busiest Cinema in Norway, the Kristiansand Kino, has installed a new Dolby Atmos system in its 655-seat Screen 1. The system uses Yamaha Installation Series components, including 29 full-range speakers, 13 subs, and 33 power-amps with ACD amplifier monitoring. The screen system includes the IF3115/64 full-range speakers, while the surround system uses both IF2112/64 and IF2112/AS types. The system was installed by Norwegian installer Unique Cinema System (UCS).

www.yamahacommercialaudio.com
www.ucs.no

Ambient's Argosy Stance

Ambient Digital Media, based in Marina Del Ray, California, and owned by the Post Modern Group since 2011 has built a new audio post production facility with four-person voiceover booth and Pro Tools / D-Command-based control room. Initially built to repurpose multi-season TV series' for iTunes, the room has since expanded its role.

To house the console, Ambient has installed an Argosy Console, Inc. Mirage D-Command desk, which includes two six-space rack bays. At Ambient this houses a mic-preamplifiers, compressors, plus a Dolby CP750 processor that manages the room's monitor system (JBL LSR and Cinema Surround).

www.argosyconsole.com
www.ambientinc.com



BAFTA For Goldcrest

Two and a half years after Goldcrest Post launched a new Sound Design department spearheaded by Adrian Rhodes, the success and reputation of his talented team has culminated with a BAFTA Craft award for 'Sound: Fiction' for *Richard II* – part of *The Hollow Crown* series from Neal Street Productions.

Rhodes proudly took to the stage and spoke on behalf of the team: "The BAFTA Craft Award for Sound is a wonderful recognition of our talented production and post production sound crews that successfully brought over 10 hours of Shakespeare to our screens in 2012." He continued, "Goldcrest's primary objective when we launched the department in 2011 was to quickly establish pole position in the sound editorial field and we are well on course to fulfill our goal."

www.goldcrestfilms.com

Rumble In Jungle

Soho-based facility, The Jungle Group, has announced a restructure which will bring its audio facilities under one roof with a £500,000 refurbishment of its Wardour Street offices. This announcement follows the news that Jungle's Dean Street facility would not be granted a new lease when it expires in August.

The company will refocus its business back to its audio heritage, specialising in music and sound design for advertising, promo, and broadcast. Jungle will continue to provide audio services for the company's former VFX and production arms, however it will no longer be under the Jungle umbrella but instead will operate in its own right.

www.thejunglegroup.co.uk



Paterson Goes State-Side

Todd-AO has announced that the company will be adding Academy Award-winning Re-recording Mixer Mark Paterson to its creative team in Los Angeles. Mark will be leaving London-based Goldcrest studios. Coming fresh off an awards-season that saw a clean sweep in the sound mixing category for *Les Misérables* at the Academy Awards, the BAFTAs, and at the Cinema Audio Society, the UK-based Paterson said: "Todd-AO has long been a company I have aspired to be a part of, and it is a real thrill for me to have this opportunity to work side by side with the extraordinary collection of creative talent at both Todd-AO and Soundelux."

www.todd-ao.com

DiGiCo Is A Sure Shot

Sure Shot Transmissions, a US-based mobile production and satellite services outfit with offices in New York, Dallas, and Youngstown, Ohio, has added a fourth 40-foot full-service expandable

HHB Communications has supplied Staffordshire University, Sheffield Hallam University, and the University of Derby with multiple Yellowtec iXm Digital Recording Microphones to support their journalism programmes. HHB originally supplied Staffordshire University with 21 iXms for their courses in Broadcast Journalism. They have since expanded their stock by an additional ten to cater for students on other broadcast-based courses. Sheffield Hallam University purchased 21 iXms to replace recording devices that the students found too complicated.

www.hhb.co.uk

US-based Mobile production specialist TNDV is adding a fifth truck to its Nashville-based fleet. TNDV has outfitted the truck, dubbed Vibration, with a Studer Vista 9 digital mixer and a redundant Pro Tools multi-track recording system. The truck also includes a MADI audio infrastructure for communication between the mixing room and remote stage boxes positioned around a venue or shoot location. This will allow TNDV to maintain a large, redundant multi-channel infrastructure with a simple fibre cable.

www.tndv.com

www.studer.ch

Clear-Com is providing the Japanese broadcaster, Kansai Telecasting Corporation (KTV), with a unified communications infrastructure for its remote productions. The Clear-Com Eclipse-PiCo Digital Matrix Systems and V-Series Intercom Panels have been installed in KTV's fleet of mobile production vehicles and integrated with the station's other communication systems. This has enabled KTV crew members in the field to communicate easily and collaborate effectively with those back in the studio.

www.clearcom.com

truck to its operations. The Cynthia Lee is outfitted with a DiGiCo SD10B console, and has already handled install feeds at a host of events including the 39th Ryder Cup for the UK's Sky Sports News, the 2012 All-state BCS National Championship, and the Daytona 500 for ESPN in the US, as well as the 2013 Super Bowl for Nippon TV in Japan.

"Our intention when we built the truck was to meet ESPN's need for a

mid-level production truck; one that was more like a 6-8 camera production rather than the typical 10-15 one," said Sure Shot Owner, Dennis Kuncie. "We worked closely with ESPN to determine what audio board would be suitable for them in this specific application and DiGiCo is what they recommended. The people at DiGiCo worked with us to meet our price point to stay within the budget. But more importantly, the SD10B's footprint, versatility, and power – all those things came into play in our decision. DiGiCo

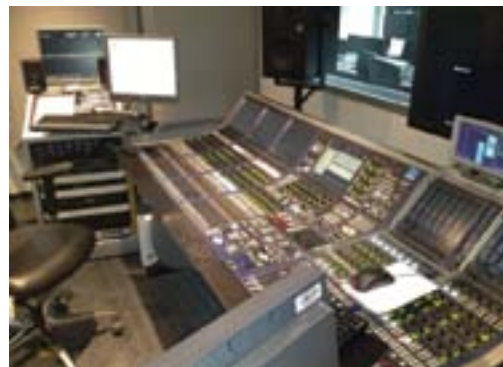
was also very supportive with its training; they came to our facility in Ohio and worked with Kory and our Chief Engineer Scott Tucker to show us the things needed to make the board workable out in the field. You've got to have a console that is very user-friendly or else you're in trouble, and the DiGiCo console offers us the kind of flexibility and versatility we have to have as an independent contractor working with all the major networks."

www.digico.biz

Comms For Canada

Rogers Media Inc, a subsidiary of Rogers Communications Inc, one of Canada's largest media providers, has installed eight Studio Technologies StudioComm 76DA/77 5.1 Surround Monitoring Systems throughout its newly upgraded facilities. "We recently upgraded our production facilities to HD and surround, and needed a reliable monitor-selection unit to handle 5.1 and stereo tracks from multiple sources," said Nathan Pachal, Senior Broadcast Facilities Technician for Rogers Media. "We have put these units in our video control rooms, our audio control room, our production edit suites, and post-production room; giving our technical staff standardised ergonomic and operational capabilities for all monitor touch points in the complex."

www.studio-tech.com



Lawo Upgrades

Lawo was recently commissioned to upgrade the existing installations at German television station ProSiebenSat. 1 Produktion. There was already an 8k router card in the HD Core of an mc266 mixing console in place in Control Room 6; that was additionally configured as an audio router in order to network five control rooms in all. This meant there was no need to acquire and install an external router. All that were added were three DALLIS breakout boxes to ensure each room had the requisite inputs and outputs at its disposal.

In Control Room 8, an mc256 MKII console with 144 DSP channels was installed to replace the existing Studer console. Each of the existing mc266 consoles in Control Rooms 7 and 9 was also replaced by an mc256 MKII, so as to have identical consoles everywhere.

www.lawo.de

SSL For Belgium OB

ProjectBuilders, the design and systems integration division of Videohouse, a company that manages 10 television production facilities in Belgium, has installed two Solid State Logic C100 HDS Digital Broadcast Consoles in two DR (Danish Broadcasting Corporation) OB Trucks. Choosing SSL for the OB trucks represents continuity for the DR engineering staff as DR recently completed a massive, four building, 133,000 square meter complex for television, radio and live concert/events featuring eight C200 and three C100 consoles.

One of the trucks offers 16-camera base stations and the other 8-camera base stations. Both are used for video capture and live broadcast of events in the region, ranging from sports, to entertainment, to news.

www.solidstatellogic.com



Riedel Readies For Oz Switch

His Majesty's Theatre in Perth has installed a Riedel digital intercom system in preparation for Australia's 'digital dividend', which mandates the release and eventual auction of 126MHz of contiguous RF spectrum.

The new all-digital system at 'The

Maj' is centrally controlled by a Riedel Artist 32 digital intercom matrix. The theatre has opted to replace its traditional analogue partylines with Riedel's Performer digital partylines, and exchange its existing wireless system with Riedel's Acrobat digital wireless system.

"The implementation of the Riedel system at His Majesty's Theatre has made vast improvements in the venue's back-of-house operations as its high-level coverage greatly increases the scope of our flexibility and opportunities

for communication in both performance and rehearsal modes," says the theatre's general manager, Rodney Phillips.

The Acrobat system runs in the DECT spectrum at 1.9GHz, well clear of other wireless audio systems and completely unaffected by the digital dividend. The single CC-8 base station can control up to 18 wireless belt packs, each with two full-duplex channels; and four carefully placed CA-6 antennas guarantee complete coverage throughout the facility.

Rich interfacing allows the audio team to patch all of its paging

microphones directly into the stage manager's 1RU control panel, and four Artist key panels (one rack-mount and three desktop) provide users high-quality audio and total system control. Riedel's Director software also allows technicians to control conversations – in other words, crews only hear what they need to hear, which is said to improve the clarity, utility, and overall safety of all theatre communications.

www.riedel.net

www.hismajestystheatre.com.au

With Eighth Day Sound at the production helm, the audio kit on Rihanna's 27-date Diamonds World Tour includes a pair of DiGiCo SD7s. Each SD7 is in an Optocore fibre loop with two DiGiCo SD-Racks along with one mini SD-Rack. FOH Engineer, Kyle Hamilton, was first introduced to DiGiCo when working on a D5 with Mary J Blige. "It's the digital desk that sounds analogue," he insists. "Some desks colour your sound and I like the fact that the SD7 is transparent; it's also got tons of headroom."

www.digico.biz

Fort Lauderdale's performing arts hub, Parker Playhouse, first opened its doors in 1967, and the 1,168-seater venue now hosts plays, musicals, and concerts. Head Audio Engineer, Anton Foresta recently acquired a Soundcraft Si Expression 3 console for the venue. "I came across information on the Si Expression 3 online, and as soon as I read about it, I knew that was what I wanted," Foresta explained. "I like the I/O, the 32 inputs and 16 outputs; and having a graphic EQ on every single output is an advantage that's unique to this board as well. At this price, nothing compares."

www.soundcraft.com

For the sixth year in succession, the British Music Embassy supported UK artists playing at South by Southwest festival in Austin by putting on events in the 300-capacity Latitude 30 venue, and promoting their appearances. London-based Cato Music provided an appropriately British setup including an abundance of Turbosound kit: twin Flex Array hangs of powered TFA-600HDPs and two TSW-218DP subs; four TMW-115 wedges; and an NuQ-15DP. Two Midas PRO2 consoles were also deployed.

www.turbosound.com

Belgian dry hire company, Yes Rental, has acquired a plethora of APG kit including 24 SMX15 stage monitors with racks equipped with DMS26 digital processors and 24 SA30:2 amplifiers; and eight TBS118 subs. Orders for DX5, DX8, DX12, and DX15 boxes will take place in the coming weeks.

www.apg.tm.fr

ORW Opts for L-Acoustics

After more than two years of restoration work, the Théâtre Royal de Liège, home of the Opéra Royal de Wallonie (ORW), now boasts a state-of-the-art L-Acoustics sound system.

The ORW required a modern and flexible system that would work with a range of applications, therefore system installers, Riva Audio and L-Acoustics' Belgian distributor XLR sprl, deployed 20 KIVA enclosures, eight SB18s, and 14 8XTis.

"We took into account the new furnishing of the theatre, and installed a KIVA line-array system on either side of the subtitled projection beam above the stage," explains Riva Audio's Managing Director, Frederic Vard. "We have ensured complete coverage of the whole theatre; every seat offers the same listening comfort."

www.l-acoustics.com



iLive, With Wings

Scottish company, Ward-Steedsy Audio, deployed an Allen & Heath iLive R72 surface and two MixRacks for the Red Bull Chasers cycle event in Edinburgh.

The R72 handled the main audio feeds as well as outputs to the OB truck and the first PA system; one Mix Rack had local inputs from the Red Bull DJ truck, outputs for the second PA system, and an ACE link to another rack; and the second Mix Rack handled the input from a second MC and outputs to a third PA system.

www.allen-heath.com



Yamaha CL3 Used on Hymne a L'amour Show

A Yamaha CL3 console was deployed for the recent *Hymne a L'amour* production at the Leicester Curve theatre, which tells the life story of French chanteuse Edith Piaf.

Sound Designer was long-time Yamaha user, Ben Harrison, who had no hesitation in selecting the CL3 for the job at hand.

"We were aiming to achieve something epic in its audio quality, and with its extensive onboard processing, the CL3 was a great solution," Harrison says. "It's very intuitive and user friendly, and the idea of fader banks being able to be used for different functions is very useful, particularly with a configuration of 16 DCAs."

A Rio 3224-D I/O unit handled the main inputs and outputs, while 16 channels of sound effects were input via a Yamaha MY16-AT ADAT interface.

www.yamahaproaudio.com



Develop First Fruits

The develop conference in Brighton is Europe's premier forum for the exposition and discussion of all matters relating to the development of today's and tomorrow's videogames – from creative and technical issues through to business affairs. It's also a highly convenient networking opportunity.

Each year, develop stages dozens of conference sessions featuring the industry's leading visionaries and best-of-breed practitioners. Delegates can expect dozens of top-notch sessions and keynotes over a series of themed 'strands', including the ever popular and world-renowned one-day audio track, which offers anyone interested in the music, sound, dialogue, and technology of game audio the opportunity to experience an engaging and informative day's presentations in a collegiate atmosphere, as well as enjoy hobnobbing with the industry at large, right beside the seaside in buzzing Brighton.

Sessions announced so far include:

Sound and Music: Best Friends Forever – Communication and Influence for Better Results

Jo Orland – Senior Sound Designer – Sony Computer Entertainment Europe

Jim Fowler – Music Production Supervisor – Sony Computer Entertainment Europe

Great Failure – Great Learnings

Thomas Bärtschi – Audio Director, Hitman: Absolution – IO Interactive, Copenhagen

Artistic Expression In Game Audio Design

Chanel Summers – Co-Founder – Syndicate 17 & Adjunct

“Delegates can expect dozens of top-notch sessions and keynotes over a series of themed ‘strands’, including the ever popular and world-renowned one-day audio track...”

Professor – USC School of Cinematic Arts, Interactive Media Division

Hearing The Unseen: An Exploration of Off-Screen and Acousmatic Sound

Rebecca Parnell – Sound Designer/Director – Magicbrew

Attendees are also warmly invited to have their say during the now customary 'Open Mic' closing session of the day, which takes place over a cold beer and offers the chance for all present to chew the industry cud and set the game audio world to rights.

Develop runs from July 9-11, 2013, with the one-day Audio Track taking place on Thursday, July 11.

Visit www.developconference.com for further details.

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JOURNEY

Journeyman Reflects

Following a sensational night at the BAFTAs where Journey picked up no fewer than five of those coveted masks, including two for its music and sound, *Audio Media* caught up with Keith Leary, Music Manager, Sony Computer Entertainment America, Product Development Service Group, about his work as Score Producer and Mix Supervisor on the multi-award winning PlayStation title that has wowed both game-playing public and videogame industry alike.

AM: Many congratulations on winning both Original Music and Audio Achievement BAFTAs. Why do you think the game's audio experience has been so well-received?

KL: I think one of the main reasons Journey's aural experience works well is that no sound or music is there for its own sake; there's a reason for every single sound and note that plays. It's not about the quality and appropriateness of the sound design and music, it's all about eliciting the right emotional response. There's also a psychological aspect to the soundscape where we introduce certain instruments and sounds in such a subtle way that players generally won't actually 'hear' them because they're so tied into the game-play. For example (spoiler alert!), you only hear the harp when you meet somebody and get close to them. If you asked players whether they noticed, my guess would be they had no idea, but, psychologically, the harp really contributes to the emotional bond created between two players.

AM: There's a sense of cohesion about the sound and music – how did that come about?

KL: Composer Austin Wintory wrote a suite of pieces early on in an effort to find the right tone and feeling to support the story's emotional arc. Lead Sound Designer, Steve Johnson, worked closely with Austin throughout. Great effort was made to complement what each other was doing; everything had to fit the aesthetic. For example, at a particular moment there might be some low rumbling sounds so music would stay away from those frequencies. Sounds with tones were chosen carefully to complement music... conscious creative choices.

Another great example of collaboration between sound and music is the player singing/shouts – a combination of processed bird chirps, along with musical and vocal elements provided by Austin. Pitch sets were chosen for each game section so they harmonised with the score. Variations were created for your character versus your companion, so each has their own accents but speak the same language. These sounds evolve to reflect the emotional arc, feeding into whether the player feels more empowered or weak at certain points along their journey. Again, it's very subtle, but it supports the emotional response.

AM: What kind of interactive music approaches are used in Journey?

KL: We used several adaptive music approaches in Journey. In certain areas we took a layered approach, allowing the music to build organically as the player progresses. Other times we branched

from one segment to another, the main philosophy always being to transition in a musical way. It might mean waiting a few bars for a musically appropriate place, and/or creating a special musical phrase to go seamlessly from one piece to another (all beat synchronous).

AM: What have you learned from this project to take forward into future productions?

KL: For me, Journey underlines that creating music and sound is not about tools and technology but about human interaction, collaboration, virtuosic performance, passion, great writing, soul, emotion, and so on. And this is what I try to bring to every project that I'm lucky enough to be involved in. **AM**



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A Musical Monopoly

The longest-running and more respected attempt at presenting live music on TV from both new and established artists is *Later... with Jools Holland*, currently in its 42nd series on BBC2. The show grew out of the early 90s arts strand *The Late Show*, surviving its source to become the primary home of 'serious' popular music on British TV, featuring live performances and sometimes awkward, overly-chummy chat with host Holland, the former keyboard player with Squeeze and now leader of his own Rhythm and Blues Orchestra.

Like its predecessors, this latest series has been notable for an impressively eclectic list of guests – so far including Suede, Primal Scream, Laura Marling, and Eric Burdon – but more attention has been given to where the show would be produced and recorded. Like other productions made at BBC Television Centre (TVC), *Later...* faced an enforced move from the west London broadcast centre, which had been sold to property developer Stanhope PLC for redevelopment into apartments, plus three new HD 5.1 TV studios.

Making History

TVC has a significant place in the history of music on TV. Two seminal shows made there were *Top of the Pops (TOTP)* and *The Old Grey Whistle Test*, both of which influenced the look and sound of pop and rock during the 1960s and 70s. The first edition of *TOTP* was staged in a converted church in Manchester but later became a weekly fixture at TVC, before moving to BBC Elstree in the early 90s.

TOTP was based on the Top 40 singles chart, running down the list at the end with performances by some of the hit artists squeezed into half an hour. *The Old*

"It's... a testament to the engineers who worked on the show and their BBC training... In 1971, Edgar Winter came on to play Frankenstein and it is unlikely that anyone on the team was familiar with the band or the track; but it was mixed well by a guy who the previous day was probably working on Blue Peter."

Jill Sinclair

Grey Whistle Test provided a different angle on modern music, focusing on album tracks and acts that usually did not trouble the singles chart. Artists as diverse as Meat Loaf, Alice Cooper, Talking Heads, and The Wailers made significant appearances on the show; many archive performances from Whistle Test's 70s heyday are now available on DVD and show the versatility and adaptability of BBC sound supervisors of the time.

The producer of the first *Whistle Test* DVD was Jill Sinclair, who worked on the show as a Production Assistant in the late 70s and early 80s. In a 2001 interview she observed that all studio performances were mixed live to air, so there was an element of warts and all. "It's... a testament to the engineers who worked on the show and their BBC training," she said. "In 1971, Edgar Winter came on to play Frankenstein and it is unlikely that anyone on the team was familiar with the band or the track; but it was mixed well by a guy who the previous day was probably working on *Blue Peter* [the BBC's long-running children's programme]."

Other producers and broadcasters took these templates and played around with different presentations of music on TV during the 70s, 80s, and 90s. Among these was *London Weekend Television's Supersonic*, produced at its South Bank TV Centre (now The London Studios) and presented by Producer/Director Mike Mansfield, who would introduce each act from the control gallery by flamboyantly gesturing at the monitor screens shouting, "And cue [whoever it was]!"

Breaking History

The monopoly of *TOTP*, *Whistle Test*, and the BBC was broken in 1982 by *The Tube*, made by Tyne Tees TV at its studios in Newcastle. Jools Holland made the transition from musician to presenter with this show, alongside Paula Yates and, later in its five-year run, Muriel Gray. Going out live in the early evening on Fridays, *The Tube* broke new acts such as Frankie Goes to Hollywood, U2, and Paul Young; as well as courting a healthy amount controversy.

TVC has been home to *Later...* since it began in 1992, but with its closure the show was left looking for a studio that would meet its requirements. Elstree and Pinewood studios were considered, but the contract for the new series has gone to The Maidstone Studios in Kent.

Sound Supervisor Mike Felton and his colleague Tudor Davies had been mixing on a Studer Vista 8 at TVC for at least eight years and "couldn't bear the thought of working on anything else". *Later...* is now produced in Maidstone's Studio 5, which houses a Vista 8 in its audio control room. "This is not an average run of the mill show," Felton says. "It is live on the first broadcast, but we need to make 5.1 stems for the repeat. There's 160 channels of music, and we need access to everything. The Vista 8 has lots of levels and a good design of user interface."

Like any institution *Later...* is criticised for being unadventurous and sometimes a bit pleased with itself, but in a TV genre that has seen many programmes come and go, the fact it is still running says something – and is good for lovers of non-chart, pre-packaged music. **TM**

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HORIZON 2012

MOBILE STUDIO

TNDV Turns Ignition On Latest Truck

Nashville – Mobile production specialist TNDV is adding a fifth truck to its Nashville-based fleet – and this time audio is the focus.

“Most production companies with a mobile audio truck are strictly in the business of doing mobile audio,” said Nic Dugger, President and Owner of TNDV. “It is unusual for a mobile production firm to build an audio truck to work alongside video trucks. Our goal was to build a truck that could work hand-in-hand with our fleet of HD production trucks and also perform on its own. And we now have a 53-foot, 256-input, 7.1 surround sound mobile audio truck with multi-track recording prepared to go anywhere in the country.”

TNDV outfitted the truck, dubbed Vibration, with a Studer Vista 9 digital mixer and a redundant Pro Tools multi-track recording system. Dugger notes that the Studer integrates most required routing, monitoring, and processing applications, limiting the need for outboard equipment.

“Frequently, the audio mixer becomes master control in audio-heavy productions, and we wanted a high-end model that could handle multiple tasks, from music to communications,” said Dugger. “We sought recommendations and almost every sound engineer we talked to listed Studer at or near the top. And the Vista 9 has the high I/O count we need. We identified what we thought would be the biggest show we might do in terms of inputs – and then we doubled it.”

The high input count means that TNDV staff can accommodate multiple sound checks for music festivals and mix large symphony performances, for example. The Vista 9 architecture also allows technicians to support multiple IFB

and four-wire intercom mixes for off-air commentary and communication. Vibration includes a massive RTS ADAM matrix with 120 intercom ports – a far more expansive system than any audio production truck, and bigger than many video production trucks. This means that Vibration can easily provide a central intercom infrastructure for any live event, or supplement existing matrix intercom systems.

The truck also includes a MADI audio infrastructure for communication between the mixing room and remote stageboxes positioned around a venue or shoot location. This will allow TNDV to maintain a large, redundant multi-channel infrastructure with a simple fibre cable.

Vibration includes two additional rooms beyond the mixing space: a machine room for all noise-producing infrastructure equipment to ensure a soundproof environment in the other rooms; and a client lounge that doubles as an isolated tracking space.

“The client lounge is not only a place for crew and clients to relax, but also a very practical space for recording.

It’s outfitted with a variety of amplifiers and headphones for monitoring and works great as a space to lay down voiceovers and instrumental tracks,” said Dugger. “This is especially nice being based in Nashville, as we can drive a multi-track recording studio to an artist’s home and provide a robust, high-end recording environment in the

driveway.”

TNDV has planned a modest video infrastructure for broadcast applications and certain live performances, including a 40-input HD-SDI router to transport video signals, and a 16-input HD video switcher with an integrated multi-viewer. LED screens throughout the truck will allow crew or clients to view Pro Tools displays, live cameras from inside a production venue, or one of many POV cameras located around the truck to view sound engineering as it happens. At the core of the truck, the Vista 9 will produce surround sound and stereo audio mixes for broadcast events.

“In addition to front of house and PA mixes, many events will require remixing for broadcast, web streaming, and DVD production,” said Dugger. “For example, there is so much audio associated with awards shows that it can’t be properly serviced in the video production space alone. It needs its own pace, setting and production staff, especially if surround sound is involved. Vibration has really been brought to life to intelligently allocate crews for large productions.”



BAND IN RESIDENCE

The Allman Brothers in New York City

New York – The Allman Brothers Band is currently in the midst of its annual residency at the Beacon Theatre in New York City. For this year’s 11-show stretch, Lititz, Pennsylvania-based Clair Global is providing two Harman Studer Vista 5 SR digital consoles for front of house and monitor mixing.

For nearly every year since 1989, The Allman Brothers Band has had an annual residency at the Beacon Theatre, where the band’s shows are celebrated for their unpredictability. Because of the band’s extensive

catalogue of material, remarkable improvisational skills, and numerous surprise guest performers, no two Beacon Theatre concerts are the same. This year’s shows have included guest appearances by the Blind Boys of Alabama, Joan Osborne, John Popper, and Luther and Cody Dickinson.

FOH Engineer Bruce ‘Slim’ Judd and Monitor Engineer Earl McCoy are both using Vista 5 SR consoles at their respective positions. In addition, The Allman Brothers Band is utilising the Beacon Theatre’s in-house PA

system, which features JBL powered VERTEC line arrays.

This year marks the first time Studer Vista 5 SR digital consoles have been used for the band’s Beacon Theatre

residency. “I really like working with the Vista 5 SR – in my opinion, it’s the best sounding digital console out there,” Judd said.



Funktion One in Demand

New York/Los Angeles – Sound Investment Audio has been making quite a stir of late. The Funktion-One installer was recognised in late-2012 by Beatport, which featured five of its Funktion-One projects in the 'Top 10 Best Sound Systems in America' chart. More recently, the company has completed work at three new nightclubs – two in New York (Output and Marquee) and one in Los Angeles (Sound).

Though each of the three venues is unique in design and ownership, they share several commonalities. They all have a Funktion-One speaker system, specified through a Funktion-One/Sound Investment Audio collaboration. But there's more. Each of them features a bespoke sound system that incorporates new Funktion-One technology.

Sound Investment Audio's Dan Agne said, "We

were very fortunate to be able to install the new Funktion-One technology at Output, Sound and Marquee – the operators of these venues are some of the best in the business. Having heard the three systems and witnessed the audience reaction, I can confidently say that we have arrived at a new level of high-fidelity audio."

And on the emergence of Funktion-One's latest products, Tony Andrews commented: "We're rather pleased to have arrived at unprecedented levels of sonic power and clarity with our new components. These will form the basis of further product development."



SOUTH BY SOUTHWEST

iLive on Stream

Austin – Usher, Diddy, Macklemore, and Bun B is just a short list of acts at this year's South by Southwest music conference, one of the world's largest music conferences, just concluded in Austin, TX; and Allen & Heath digital consoles were used to stream the experience live to millions of fans around the world.

Allen & Heath partnered with The Fader Fort and Dell to stream more than 50 acts during the South by Southwest (SXSW) Music Festival (March 12-17). The festival attracted an affluent crowd of music executives and aficionados, technology geeks and celebrities.

The Fader Fort presented by Converse

and powered by Dell, has the reputation of being the spot to see live music during SXSW. This year it brought together a mix of today's most innovative and emerging artists.

Two Allen & Heath iLive-T112 and iDR-64 mix engines outfitted with the latest M-Waves interface cards were used for the broadcast feed and production of Fader Fort. The audio workflow began with microphones capturing sound from the stage, which was then channelled through an Allen & Heath MixRack and iLive audio consoles. The signal was processed in real time by a Waves SoundGrid audio networking platform controlled by a Dell Precision M4700 mobile workstation.

MAJOR TOUR

Rihanna's Diamond Dates

Rihanna's much anticipated Diamonds world tour kicked off in early March for 27 dates peppered across the U.S. and Canada through May – with more dates on the global horizon stretching into the fall. With Eighth Day Sound at the production helm, the audio kit included a pair of SD7s and a d&b audiotechnik PA provided by Eighth Day Sound, with Kyle Hamilton at FOH and Ed Ehrbar on monitors.

Last October, the group undertook an intense promotional tour (7-7-7)

hitting seven countries in seven days for seven shows. Eighth Day supplied four complete control systems—two in Europe, one in the U.S., and another in Mexico City – so the engineers were able to simply walk in and mix. Although Ehrbar was working on an SD7 for the whirlwind week, Hamilton had to make do with another digital desk and was happy to be back on the SD7.

"Getting back on the SD7 for the Diamonds tour was like a homecoming... 'Yes, I'm back on my desk!'" Hamilton states. "When I was

first introduced to DiGiCo, I was using D5 on Mary J Blige and Lionel Richie. Then the SD7 came out, I used it with Lionel Richie, Janet Jackson, Prince, and now Rihanna. I've had many years on the desk. The SD7 just feels right. It's the digital desk that feels analogue to me; it sounds warm. I don't have to do a whole lot to make what I want to accomplish happen. Some desks colour your sound and I like the fact that the SD7 is transparent. What you put in is what you get out of it. Also, this console has tons of headroom."

Each SD7 is in an Optocore fibre loop with two DiGiCo SD 192kHz racks, along with one mini SD rack to wrangle the mass of over 96 inputs for the four-piece band and back-up singers. The majority of the inputs were taken up by three drum kits and two keyboard rigs, with 24 channels of Pro Tools. The set list, comprised of 35 songs, is broken into acts, each representing a different facet of the singer's repertoire—from reggae to rock and more.



JAZZ VENUE

SFJAZZ Complex Opens

San Francisco – Opened early in 2013, San Francisco's SFJAZZ Centre is the first performance and education complex in America that was built from the ground-up exclusively for jazz. At the centre's heart is the world-class Robert N. Miner Auditorium, which strikes a meticulous balance between the hall's controlled natural acoustics and the transparent audio reproduction by Meyer Sound's Mina line array loudspeakers.

The design of the audio system and the room's physical acoustics presented a challenge to Sam Berkow, Founder and Principal of SIA Acoustics.

"SFJAZZ wanted the ultimate room for musicians to play in, for the audience to listen, and for engineers to record," Berkow says. "To do it all in a relatively small space that allowed flexible seating for up to 700 wasn't easy."

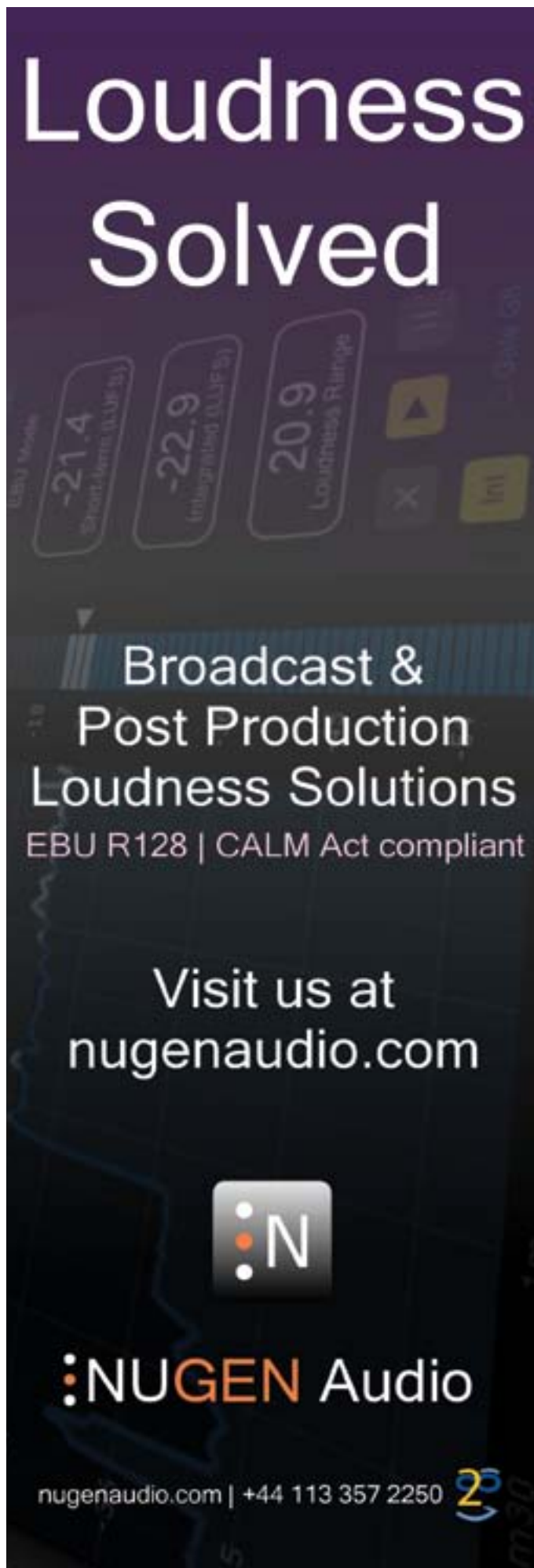
As the hall's natural acoustics are designed to carry the stage sound into the audience, this sound system's role is about balancing and augmenting the natural stage sound while remaining sonically transparent. With that in mind, Berkow, SFJAZZ Founder and Executive Artistic Director Randall Kline, and Production Manager Cecilia Engelhart selected Meyer Sound Mina loudspeakers based on their uncoloured reproduction and linear response, regardless of output level.

"Overall, we strongly preferred the sound of Mina," Berkow says. "With Mina, we could be confident that the sound from the speakers would match the sound from the stage. In particular, Mina's acoustic manifold gives that very soft, silky high frequency sound that brings out the nuances of instruments like saxophones."

Bolstering the dual arrays of 16-each Mina are five 500-HP subwoofers flown in a three-front, two-rear cardioid array. "The sub array works extremely well," Berkow says. "It keeps off-axis energy from muddying the sound on stage; something which is extremely important for jazz."

The complete Meyer Sound system also comprises eight JM-1P arrayable loudspeakers, two UPJ-1P VariO loudspeakers, and four M1D-SM line array loudspeakers as side, rear, and front-fill loudspeakers respectively, and a Galileo loudspeaker management system with two Galileo 616 processors.

"The sound system is flawless, crystal clear, transparent, and perfectly matched to the hall," says SFJAZZ's Randall Kline after the opening concert. "The sounds of the instruments were the most natural I have heard in a hall this size. I especially noticed the vibraphones of Bobby Hutcherson and Stefon Harris, which sounded intimate but powerful."



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Louis Hernandez, Jr., Avid CEO

Personality Profile

A Special Report, by SIMON ALLEN

As Avid announces the next big upgrade to Pro Tools – version 11 – there are yet more changes occurring inside the company, this time right at the top. In February this year, Gary Greenfield voluntarily resigned as CEO of Avid and the Board of Directors appointed Louis Hernandez. In a short press conference at Avid HQ in Boston, MA, I attempted to get a feel for Hernandez's vision for Avid's future.

Backing The Money

Hernandez comes from a financial background, although has always had a connection with technology as an executive in a variety of complex technical fields including content management, e-commerce, workflow management, and financial services. It was apparent from the moment we were introduced that even though his background is in finance, he is a lover of technology and has a high level of knowledge.

Before Louis Hernandez was appointed as CEO of Avid, he was on Avid's Board of Directors, including a period as Lead Director, so he already has vast experience and knowledge of the company. Prior to joining Avid, Louis was the CEO of Open Solutions Inc., a technology provider to financial institutions worldwide, which was sold in January 2013 for over \$1 billion. He currently also serves on the Board of Directors for HSBC, and is an award winning entrepreneur who has helped grow technology organisations from start-ups to large companies. He is the author of two

books, numerous articles, and has also been a featured guest on many mainstream TV shows where he discusses everything from technology to economics.

He has a keen interest in how technology plays a part in the community. He says he has an 'alternative filter' for deciding whether or not to get involved in projects, and prefers any technology that 'brings humans closer together' – including Avid. He is passionate about the company, and explained enthusiastically that the grand plan is to build on the company's fine heritage by being more aggressive in growing the market.

Hernandez hopes to do this by concentrating on providing the user with efficiency through its technologies, which is very much in line with the latest updates that are coming later in Q2 with Pro Tools 11. The new version is aimed at time saving on routine day-to-day tasks to allow for a more creative experience.

Talking Strategically

At the Boston press conference, Hernandez covered some very interesting strategic ideas. His ambition is to help evolve the whole industry, which in time will fall back to the Avid market and benefit those who are doing the creative work. He discussed how content is still 'king', and how he would like to see Avid play a part in connecting digitised content to consumption. He noted that as Avid is most involved early on in the chain, the company has many opportunities to automate the whole chain. He also recognises how content is being created, protected, distributed, and consumed – all stages that are undergoing constant change.

Hernandez would like Avid to be the 'inspirational leader' in bringing great content to people. He says the industry is in transition, and he feels that the market is looking to Avid for clues on where, and how, to move forward. Wherever that might take them, Hernandez wants to get there with a more collaborative, open minded, inclusive – and aggressive – Avid.

“...the industry is in transition, and ... the market is looking to Avid for clues on where, and how, to move forward.”

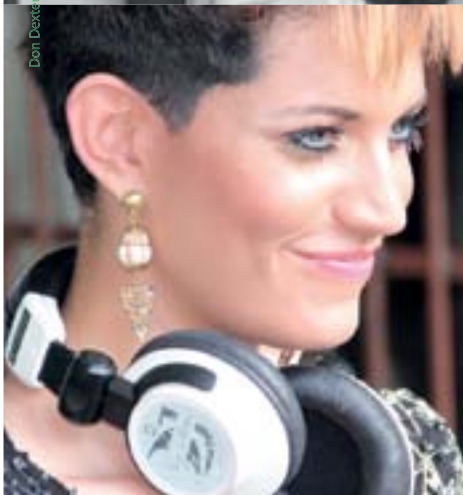


Avid has just released the latest in its Pro Tools series, Pro Tools 11 (previewed on page 40 of this month's *Audio Media*).

A Protective Stance

One aspect Hernandez was keen to single out as important was understanding that creators are now looking ever more seriously at how content is protected. He believes Avid can help them profit from their content, even with today's dwindling creative budgets, through solving technical problems. Ultimately the goal is to free-up cash for creative work, and by protecting the asset we will also be adding value.

Of course, Avid can't solve all problems, but it is clearly accepting some responsibility, especially after being so instrumental in creating the environments we now work in. Hernandez feels Avid must be there to influence whatever happens next. **AM**





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Tomb Raider

By JOHN BROOMHALL

Little could Jack Grillo have known when he started work as a sound designer for a small film post-production house back in 1995, that one day he would develop an intimate working relationship with the games industry's best loved heroine, Lara Croft, by leading sound, music, and dialogue production for a sure-fire global blockbuster. Yet, it was his early experiences in post that he cites as the ideal training ground. Grillo: "There was a lot of work for small, low budget movies; and it being a small company, I quickly got my hands dirty on a lot of different aspects – Foley, supervision, sound design, editing, ADR... it wasn't long before I'd done a bit of everything."

Just five years later however, he jumped ship to games, working on three of EA's *Medal of Honour* series before moving to Spark Unlimited for the first console version of renowned *Call of Duty*. After eight years as Audio Director, Grillo got the rather special opportunity to work with respected game developer, Crystal Dynamics, on a brand new *Tomb Raider* game.

His goals for music and sound were clear from the outset. "My chief goal for the sound design was to make it as direct and authentic as possible. Sure, there'd be places we'd branch off and shoot more for emotional impact, but with this game, a lot of that impact actually comes from things being fairly natural sounding. It's all about the details, the interesting ambient sounds, the minutiae of Foley when you're walking in the forest. It's incredibly important. When Lara's struggling, we want it to really feel and sound like it. Somehow it's scarier than a hyper-stylised sound design experience.

"Generally, I wanted the sound design to be as true to what the moment would actually sound like as possible. In turn, that gives music a lot of range to underscore emotion. Whilst we didn't want music playing the whole time, we did want it to be very dynamic, and that meant a lot of transitions. Subtle moments can turn to giant moments real quick. Of course, the overall goal was simply

to make the best sounding game we could – an organic, natural, authentic experience in sound – and emotion through music, not wallpaper."

In The Game

Creating the sounds is one thing but integration/implementation (getting them into the game) is quite another – and an aspect of game audio that differentiates it from traditional post work. Every game engine may have its singularities, but the principles are fairly universal, as Grillo explains: "Typically, you have a sound asset as a standard format wav file. That file is then packaged into a kind of alias, or hook, that contains both wav. file and parameters for volume, pitch, duration, distance attenuation, etc, and it's that hook that's addressed or 'called' by either the game code or perhaps the scripting language the designers are using to initiate sound playback. These hooks, in turn, are categorised into sound groups or sound busses, allowing you to create and adjust global parameters controlling a group – so you could determine that all weapons would have a certain volume. Then when voiceover plays, we might want to affect the volume of the ambience in another way – say, use it as a side chain, ducking levels. This kind of pipeline is repeated over and over again in a game. Also, the alias of the hook often is a collection of individual sounds, so when I say 'play explosion', in that game event, very rarely am I playing just one sound. It's more likely to be a combination of, for example, four or five different sounds playing simultaneously – each perhaps having up to 10 variations. Those four or five sounds will have different parameters for volume attenuation and pitch variation too, so if the explosion is close up, it'll have a certain feel; when it's really far off, there will probably be different settings for low pass filters and reverb sends. Building in this opportunity for variation in the way we structure and deliver our sound assets is vitally important. There may be sounds or sound events that will occur thousands and

"Generally, I wanted the sound design to be as true to what the moment would actually sound like as possible. In turn, that gives music a lot of range to underscore emotion."

Jack Grillo



thousands of times, and we want them to sound as organic as possible. In this sense, the sound 'engine' inside any game I work on is another kind of multi-track editor. When you're doing sound design for a film, you might have three different sources you're using to create the squeak of opening a door, and the door might open four times in the movie. In games, we have to figure that the door might open 400 times, so we have to cut up the source and re-combine it on the fly with variation so each time it happens, it's never an exact repeat – we're using the game technology itself to create the illusion of a unique sound every time."

Console games like *Tomb Raider* can, of course, play dozens of sounds simultaneously, complete with real-time processing of EQ and reverb treatments. In simple terms, sounds are 'triggered' by the player's actions or proximity of the 'listener position' to various 'point emitters' in the 3D game world. Though, just because a sound is triggered does not necessarily mean it should be played. Grillo: "Depending on what's happening in the game world, there could be more than 300 sounds wanting to play so we have to use culling parameters. We might say 'when this thing's off screen, don't play it,' or 'when combat is taking place, we'll set a limit on footsteps.' Or, 'if you have an army of enemies coming to get you, we only want to hear six or eight sets of footsteps at any given point to prevent a muddy mix.' There are several stages where we can choke off the number of sounds that play at once, and these are the kind of techniques for dynamically mixing at run time according to rules that say, 'no, you can't play right now, we don't care about you at the moment until you're within this proximity range, or you can play if everything else has stopped playing.'"

Listen, And You Will See

The 'listener position' (usually with the camera) in a game like this, is effectively the volume and panning master. Where you 'look' with your ears will determine the mix you hear, as the game rapidly calculates a 3D sound mix based on your position and orientation in the game world. "The nice thing about games is that being able to attach sounds to objects directly in the 3D space kind of creates this natural spread, even in stereo – the rabbit running and rustling the bushes, and not always getting weapons coming from centre but having them move around with the characters using them in relation to your own movement and position. All this helps create a dynamic mix by itself according to the parameters we've set up."

Initially, the game is developed for the XBOX 360. Meanwhile, behind the scenes, another team of software engineers is working to port over the latest version to PlayStation 3 and PC. Towards the end of the project, Grillo's team test their audio across all platforms. Although there are minor discrepancies, they do not have to make the game audio three separate times, thanks to the tools created by their software engineers. Nevertheless, a key technical consideration is that of RAM. Grillo: "The XBOX has an open shared memory – nothing is specific to sound. The game team has to divvy it up, with each department being given claim to a certain amount of resource. We had 15MB for data-compressed audio and the facility to play 12 streams simultaneously, which proved a pretty good combination. We'd always like more, and we spend our whole time hitting the limits so we have to have systems in place to mitigate that – say we're hitting our memory ceiling, we might take away variations of certain sound types – 20 footsteps may get whittled away out of memory to 15 temporarily. The game constantly loads sound data in and out of memory. Much of that is out of our hands and happens

automatically where specific audio is linked with a specific object or animation, for example. It would be loaded in when it's required, but once it's served its purpose and will not be re-used, it's dumped out of memory – graphics, physics data, sound, etc."

Making The Move

Game technology barriers have fallen and quality standards for audio have risen dramatically in recent years, so it's unsurprising that others want to make the move from linear post to interactive game sound. What advice has Grillo got for them? "First of all, having post skills is really nice. It's good to have a background in just about every aspect of linear sound design. Usually game sound departments are fairly small so everyone's going to have to touch a little bit of everything. On top of that, it's valuable to understand source control – how 100 people can all work on this game at once, checking out their bit of work, making changes, and checking it back in so everybody else has access to the new version. You also need to understand the different requirements of the mix for games. With film, there's the luxury that every time you play the scene, it's the same – whereas in games, it will be different every time. Voice-over may have a very specific role in providing feedback to the player. It's the same with sound. You're not just thinking about the emotional arc of the narrative. You may also be giving very direct hints at what you want the player to be doing to successfully navigate the game. These factors have an impact on what we as game sound designers care about.

"I think you also need the ability to embrace the chaos of game development. We're constantly working at making the best presentation of the game possible at any given point. It must sound as good as it can at every stage of the development, but that means we're doing a lot of things to final quality that we know will likely change. We'll mix a cinematic, and two months later find out it's now going to be raining in the scene, or it's daytime instead of night-time – the kind of adjustments made as the team continually proves the story – but that's just the way it is. You can't say, 'I'm not going to do that sound yet'. You have to serve the purposes of making the game better in the long term, supporting the team, keeping pace with the level designers, helping them realise their vision of the game". **AW**

"I think you also need the ability to embrace the chaos of game development. We're constantly working at making the best presentation of the game possible at any given point."

Jack Grillo



Vocal Production: DJ Swivel

DJ Swivel is probably best known for his collaborations with Beyoncé, but he has a wealth of experience from all over. PAUL WATSON talks with him about how he gets the perfect vocal.

Jordan Young (aka DJ Swivel) works out of Jungle City Studios, which is located in the heart of New York City and is owned by Ann Mincieli, Alicia Keys' Producer. Unlike Epps (feature on page 30), Swivel has always worked completely 'in the box', and artists he has worked with come from the R'n'B and rap genres, as well as pop and rock n' roll. Saying that, there are many similarities between the two in terms of workflow, attitude to kit, and technique, when it comes to vocal production.

"Getting a performance out of an artist is one-thousand per cent about keeping them comfortable and getting to know their personality. Every artist is different and will need a different sort of motivation," Swivel insists. "I know some vocal producers can get angry at the artist in a bid to get them fired up to deliver a great performance, but for me it's about support and giving the best direction I can. Singers may not always know what you're talking about, especially new singers – they often don't know the studio lingo, so I just make sure they're comfortable: do they have enough water or tea?; do they know the song?; is the vocal mix loud enough or are the headphones loud enough? All of this changes the performance. There's no one way of doing it, but that's my way and it seems to work for me."

DJ Swivel's vocal rides on a Beyoncé vocal track.



"I know some vocal producers can get angry at the artist in a bid to get them fired up to deliver a great performance, but for me it's about support and giving the best direction I can."

(DJ Swivel)



A Personal Choice

Mic selection is dependent on the artist and the voice, Swivel says; and the key to a good vocal in his experience always comes down to experimentation.

"For Beyoncé's record I set up six great microphones for her and had her sing through all of them, then she helped me decide. She understands her voice better than anybody and she ended up going for the AKG C24, which is what we went with for the record," he says. "I also love the Sony C800; it works great on some artists but it can be a bit brittle on others. We tried that on Beyoncé, but at times, especially when she was singing very high or very loud, it did get brittle, so we went for the warmer option."

In terms of the vocal chain, it completely depends on what kind of artist Swivel is working with.

"If I'm working with a singer, I generally put a Neve 1073 into a [Universal Audio] 1176 or a Tubetech CO1B compressor; with a rapper, in most cases I'm pulling out a Neumann U87 and going into an Avalon 737," he explains. "It depends on the artist and what they need; nothing will be perfect across the board, but they're my two go-tos."

A Modern Phenomenon

Like Epps, Swivel is a big fan of Auto-Tune; in his opinion, pop records of today "almost don't work without it." "The reason I say that is not because artists can't deliver



An example of a hook chain. The part is parallel processed via two busses. Both busses are identical, except one has an extra plug-in in it called Solera II at the end, which Swivel uses as an MS imager to add some depth and a bigger stereo field to a hook bus.

Swivel: “You’ll notice there’s two de-essers, and two channel strips. The first de-esser gets rid of the sibilance, the next plug-in is a channel strip for most of the major EQ’ing, filtering, and compression. Next is an RVox to just get those last little things that stick out, very little compression on this. Next comes another de-esser, which is used in notch mode to take out a weird frequency in this particular singer. I use this technique a lot. Most singers have one weird high-mid frequency that gets annoying, maybe only on certain words. Rather than EQ’ing the entire frequency out, I use a de-esser, which is just a frequency selective compressor to only pull out those annoying tones when they’re prevalent. Certain words, times when she gets loud, etc. So I’m never taking out things when I don’t need to. Last is a final EQ that’s just adding a very small amount of 12 or 13k to make it stand out a bit. And then of course the solera last, with the MS width all the way up.”

a performance – I mean, look at Rihanna, she can sing a record and doesn’t need Auto-Tune to make her sound perfect. What it’s really all about is the way songs are written nowadays. There are a lot less runs and very few dips or vibrato in pop records, and at least Auto-Tune keeps notes very straight,” he explains. “That is 2013’s pop music, basically: hard, rigid melodies; and to me, I feel as though that’s a bi-product of Auto-Tune. It’s part of life nowadays, but it doesn’t bother me at all.”

It’s not part of every artist’s life, though. For an artist as outstanding vocally as Beyonce, Auto-Tune wouldn’t work at all, he insists.

“I only love it for what it is, remember; it would make Beyonce sound worse as she has so much emotion, character, vibrato, and overall quality in her voice. Auto-Tune would just kill it. I have never used it on her, yet I’ll use it on 95 per cent of the other artists I work with. Come to think of it, I can’t think of any other artists other than her where I haven’t used Auto-Tune,” Swivel explains. “Even if I’m using it in low moderation, just to pull it back in here and there – you don’t even hear it or feel it most of the time; other times, if the song requires it, then I’ll use it a little heavier, and once in a while, the producer might want the T-Pain (US rapper) effect, and it comes down to a creative decision. No-one needs to use it that fast, but in those cases it’s just about creating a sound or effect.”

It’s Not Tricky

In Swivel’s proverbial box of tricks, he’d have a great mic, a great pre-amp, some basic plug-ins, and a touch of Auto-Tune. In his own words: “I’m not a gear head”.

“As long as the signal coming in is great, I can deal with any plug-ins as most compressors work the same, really. Give me a little reverb, a little delay, some EQ, and a compressor, and I’m probably gonna be good,” he says, assertively. “When I record, I use a little compression – just a couple of dB, as I want to have some control over the vocal; with a rapper it’s easy as they’re at the same level and tone for most of their verse – you set it, and when you have a good level in with the right amount of compression then you’re good.”

With Beyonce, however, things aren’t quite as straightforward – surprise, surprise...!

“When recording with Beyonce, it’s very interesting. Because she is so dynamic, she can be really quiet then really loud very suddenly as there are lots of nuances in her vocal performance, which is where it gets kinda tricky. This can happen within one take, and it totally changes

the vocal sound when it hits the compressor,” he explains. “The reason I chose the Avalon 737 on the vocal for her last record was not necessarily because it was the best sound for her voice – I mean, it did sound great and the chain was great – but more so it was because the input going into the Avalon is a sliding knob as opposed to clicks, so when she gets loud I am actually riding her volume going in.

“My right hand is on the pre-amp, and if it wasn’t a sliding knob I’d be hearing these 2dB clicks coming in all the time. You need to get a good level all the way through, and doing it this way was very cool: if she’s low, you want a strong input level to really hear the low end in her voice; and then when she gets loud, if you don’t adjust that volume it’s going to thin out and the vocal is just going to sound terrible.”

Sitting Comfortably?

In terms of sitting the vocal in the mix, again it depends on the song, and Swivel always works with a motorised fader.

“For a pop song, generally I get the beat where I want it and start with the lead vocal; I want it to sit a little above the snare, and this will vary depending on the production, but that’s the kind of golden rule for a straightforward dance/pop record: the lead vocal sits there just so it’s the driving force that’s not getting drowned out by the beat,” he reveals. “I then do manual vocal rides for the entire record. When I mix, I have to have a motorised fader; Pro Tools 10 has clip gain automation and that’s meant I’ve needed the fader a little less, but it’s nice to have it close by. No amount of compression is going to get every syllable and every word in exactly the right place because it doesn’t take into consideration what’s happening with the beat. The only way for me to sit them in the mix

perfectly is to manually ride it, and that can take a lot of time going over the same pass over and over again.

“Waves also has a vocal rider that basically tries to automate that process for you, but the problem is it doesn’t take into account the nuances of the track either, so if it’s a big, long note that you want to be impactful then there’s no way for the plug-in to know where it should be. For me, this is something that will never change – riding the fader – any great mixer or person dealing with vocals should really know that and be able to do that; with plug-ins, maybe that’s something that’s lacking. My mentor was Duro (acclaimed Mix Engineer who also works out of Jungle City) and I learned all of that from him. He’s from the old school but he’s new school too; he was around with the tape machines so that’s where I got it from, and I will always be doing it that way.”

A Treasured Award

Unsurprisingly, Swivel’s most treasured experience whilst recording a vocalist is one he shared with Beyonce at Jungle City – he did win a Grammy for it after all! Beyonce was recording the vocals for *Love On Top* from her last album:

“You know, I didn’t do that much, really, but she absolutely came into her own during this session. *Love On Top* was such a cool song to record, and was particularly interesting to capture. Dream wrote the song, and at the end he did one pitch modulation, so there was a double chorus at the end with a regular chorus, and then we went up a semitone for the second one.

“What Beyonce suggested was: ‘let’s do another chorus with another pitch modulation’, and it stemmed from there. We just kept going! So, I duped the chorus and pitched it up again and of course she re-sang her vocal in the next pitch, and it was amazing. The pre-roll is not in the higher key, it’s in the lower key – then all of a sudden in the next beat it goes up a semitone and she’s right in key perfectly again, and it doesn’t throw her off one bit; which I can honestly say I have never seen before – nothing of the sort, ever.

“I mean, that’s got to be disorienting listening in one pitch, then on the downbeat in a new key, and to adjust instantly there and then... Well, unbelievable! But it didn’t stop there. She ended up saying: ‘OK, another one, and another one’ – you get the picture. I think there were five pitch modulations at the end of that song. It was a truly memorable session and a very cool interesting experience. I can’t take a lot of credit for it though, because she’s just so amazing. I pressed ‘record’ and let her be her, basically!”

The Solera II plug-in used by DJ Swivel for MS processing on vocals and other instruments.





Vocal Production: Stuart Epps

Stuart Epps is a legendary Producer who has, in turn, worked with many musical legends.

PAUL WATSON taps a fraction of his studio experience for some vocal wisdom.

In any song, everyone listens to the vocals, whether their ears are trained or not. But what is true vocal production? How does a producer achieve the perfect vocal, and what's the process from start to finish? New York City-based Jordan Young (aka DJ Swivel) worked closely with Beyonce on her last album, *4*; and Cookham's own Stuart Epps was literally riding the vocal fader for most of Elton John's early career and sat alongside the legend that was Gus Dudgeon. Both have opinions, and both certainly have some stories!

Epps recalls: "I started out as tea boy at Dick James Publishing – that's where I first met Reginald Dwight, aka Elton John; I remember listening to Sgt. Peppers [Lonely Hearts Club Band] with him and both of us were totally inspired," he says. "It was around that time that I started working with him and Gus [Dudgeon], and because Elton was such a magnificent vocalist, I got to learn a lot about vocal production, which was a great platform for my later career as a producer in my own right."

Every Big Thing Starts Small

It all starts with the microphone, according to Epps, whose own trusted AKG C414 came from the Rolling Stones' mobile studio and has been spat into by the likes of David Bowie, Dave Stewart, Robert Plant, and George Harrison.

"Everyone's always sounded good on that mic, though as a standard, especially if it's a rock singer, you can't go far wrong with a Neumann U87; I used one recently, in fact, and after not using one for some time, I was amazed at how good it still is," Epps continues. "Microphone choice is like a lot of things: you tend to go with the best, and the best tends to be the most expensive. When I worked with Gus, we used to use a Neumann KM84; it's totally weird to use on vocals as it just pops when you sing into it, so we'd use a dummy mic, tell the singer they were singing into

"Everyone's always sounded good on that mic [AKG C414], though as a standard, especially if it's a rock singer, you can't go far wrong with a Neumann U87."

Stuart Epps

that, then had the KM84 positioned just to the side, and that's the one we'd use to get our sound. Gus and I used it at The Mill all the time; you can hear an ant fart at five miles using that thing... I think we tested it once."

Other microphone models that Epps favours include the Neumann U47, which he used many times when recording Chris Rea, and the classic AKG C12. Like anything, however, there are always exceptions to the rule...

"I remember recording Paul Rodgers at Ridge Farm and he was doing warm-ups through an SM58 and he sounded amazing. I turned up and put him on a top C12 – a proper old one – and he didn't really sound a lot different," Epps smiles. "Just in case someone like you asked me what I used 20 years later, I went with the C12, but the fact is because his voice was so full of mid-range and highs, it really wouldn't have made a lot of difference either way."

Breaking Out The Box

When working in those big studios, Epps would often use a Manley Vox Box, which played a big part in the recording of Robbie Williams' *Millennium* album.



"The Manley unit was such a good all-in-one piece of kit; that's what we used all the time on the Robbie [Williams] album. I don't tend to squash a vocal too much on the way in – in fact, I record all my vocalists pretty flat; in the old days it would definitely have been a dbx 160 I'd have used, which is my all-time favourite compressor for vocals," he reveals. "These days, it's all about plug-ins, but I use a TL Audio compressor when I'm recording. I don't go mad with it, but I do use some fairly hefty compression; I like it when it's popping, compression wise, and you get all sorts of interesting stuff happening."

Robo-Voices

Ultimately though, it's about the voice, Epps insists; and somewhat surprisingly for a man who's been in the game for some 45 years, he's quite a fan of Auto-Tune.

"I love Auto-Tune when you can really hear it; I like it as an effect, I guess. Also, if your vocalist is totally out of tune, I'd rather hear an affected vocal than one that's all over the place," Epps admits. "Saying that, you are in danger of losing all the inflections and certainly the vocalist's vibrato; so on the whole I tend not to mess about too much with it. There are exceptional cases, but really I use it only if it's absolutely necessary, and mostly in moderation."

Interestingly, Auto-Tune was prevalent during the entirety of Williams' *Millennium* sessions.

"During those recordings, Robbie didn't know he was being tuned; they would come in with the gear after he left," Epps remembers. "Back then, which wasn't so long ago, of course, the Auto-Tune machine was some 40-foot high! I think Robbie must have listened back to himself and learned to sing in tune after that, because as a singer, every time you hear yourself you do tend to get better."

Perfection By Astrology

So there's Epps' vocal chain explained, but what about the nitty gritty – getting that perfect vocal performance?

"Just work with an Aries, it's always easiest," laughs Epps, who himself is an Aries, of course. "But on a serious note, you absolutely need to bring out the personality in each vocalist. I'm not as good as Gus was – though he would actually make people cry when he pushed them to the limit – but I have more empathy, and I think that's because I can sing myself; Gus was very ruthless as he was never a singer, he just wanted the job to be done. It worked for him, but everyone has their own way of doing it."

Epps admits though that there's nothing worse than a singer that comes into the studio to record a song, knowing that he or she is completely capable, and then shows no urgency in delivering.

"That's when I get really pissed off," he says. "I remember Kiki [Dee] was doing *I Got The Music In Me* at Electric Lady Land Studios and she just wasn't in the mood. We had to get it done as all the BV girls were waiting – one of which was Whitney Houston, funnily enough. Anyway, Elton decided to take all his kit off as she came in to do the vocal and streaked across the room to try and make her laugh. It must have worked, as we got the take!"

"I remember when Elton discovered electronic backgammon... He'd play against himself at The Mill while we were rewinding the tapes to keep his focus before a vocal take, then he'd turn the switch on and deliver an amazing performance, just like that – admittedly it takes experience, but it was always incredible to watch.

"I just like to work with people that know what they want and can just go for it; it's funny, sometimes if you tell a singer they're a bit out of tune they take it personally! It's an incredibly in-depth thing, vocal performance, and there are so many singers out there that think they don't need to act it or to perform it. If anything, you need to over-act a vocal performance; put more into it than you would if you were sitting on the toilet, at least, you know?"

"Kiki [Dee] was doing I Got The Music In Me at Electric Lady Land Studios and she just wasn't in the mood... Anyway, Elton decided to take all his kit off as she came in to do the vocal and streaked across the room to try and make her laugh. It must have worked, as we got the take!"

Stuart Epps



Making The Break

Although Epps has worked with many of the greats, a lot of his time these days is spent looking for new talent and helping develop their careers. How then, does this differ from working with a superstar, in terms of getting that ultimate vocal performance?

"It varies so much to be honest, but one nice example is a girl who I've been working with recently. She's only 16, and she has a brilliant voice, but she'd never sung without her guitar in hand," he explains. "I suggested that we do the guitar first and then the vocal, and it was crazy as she just delivered with ease. I think that's because I made sure she was comfortable in her surroundings really; despite it being alien to her, when she listened back, she was so surprised at how good it was. In honesty, I'm not sure she realised she could actually sing that well! I told her that every time she records herself, she will learn and then get better; it's a case of honing your craft, and as a producer you just hope that all the artists will listen to your advice and then develop from that. She certainly did, which was really great."

A Hands-On Luxury

Although Epps is certainly well versed on many of today's DAWs and processing tools, in terms of sitting vocals in his mixes, he really misses being hands-on, and believes that not having that luxury can have adverse effects on any master.

"When I started working with Gus, I'd only have the vocal channel – that would be my job. I'd engineer all the tracks, but when it came to mixing, that was my fader! And believe me, I'd make a bloody meal of it, wiggling it about, all sorts," he laughs. "But from a vocal production point of view, Gus would suggest pushing certain words, so you get emphasis in all the right places. For example, as it's fading out, you'd give it a boost – stuff like that, and we'd really get into it."

"These days, with so much heavy compression, you arguably don't need to do that, but as a result, you tend to lose the subtleties of an honest vocal performance. It's not necessarily a good thing; it's occasionally nice if you lose the vocal a little in the mix, then suddenly it's back in your face, then you drop it off a bit; you just can't do that without riding a fader, really, as that's the natural way." 



The Musical Instrument Museum And Theatre

CLIVE YOUNG visits an ambitious project dedicated to both preservation and to performance.

Stepping into the spacious halls of the Musical Instrument Museum, you might expect the Phoenix, AZ-based institution to be filled with a Hard Rock Café-like collection of famous musicians' tools – and you'd be wrong. Sure, you can see the Steinway that John Lennon wrote *Imagine* on, and the last guitar Elvis played in concert – and there's plenty more where that came from – but the expansive museum has far greater ambitions than mere nostalgia.

Since opening in April 2010, the \$250 million, 200,000-sq.-ft. facility has become the largest museum of its kind in the world, presenting up to a third of its 15,000 instruments from more than 200 countries at any one time. The five geographically oriented galleries present instruments from around the world, using audio and video to show them being played within their native contexts. Letting visitors hear the collection without turning the facility into a giant den of cacophony are roughly 1,800 Sennheiser guide-PORT compact receivers with headphones; as users pass different exhibits, the wireless receivers segue into the appropriate soundtrack.

Pro audio's past and modern-day solutions can be seen, too, between exhibits that feature historical gear and the current sound reinforcement equipment used in the museum's Music Theater.

Audio Recorders, a Phoenix-based studio from the 1950s and '60s where Duane Eddy's *Rebel Rouser* was recorded, is partially recreated in one exhibit, with its Ampex 300-3 multi-track recorder, 1950s JBL Signature monitor speaker, Western Electric 23C speech input mixing console, Altec 438A compressor, and more. Meanwhile, a hip-hop display presents the tools of the

"Ulrich was planning to buy an artwork from a museum when a friend joked, 'For that much money, you could start your own museum.' ...the comment gave Ulrich pause – and an idea."

trade circa 1982, with a late-'70s Gemini MX-9900 mixer, traditional Technics SL-1200 turntables, Pioneer SE-30 headphones, and the classic Roland TR-808 Rhythm Composer.

A Full Understanding

Of course, seeing and hearing instruments is one thing, but experiencing them used in a live performance is crucial to fully understanding them. With that in mind, one end of the museum is anchored by the two-story MIM Music Theatre. The theatre sports a 1,250-square-foot, stone-coloured, maple wood stage, and 299 seats set along a slope that leads up to the house mix position and an additional audio control room on the second floor. Hosting a dozen or more concerts a month, the space showcases a wide range of acts, from Doc Severinsen to the Sierra Leone Refugee All-Stars to Suzanne Vega to Interpreti Veneziani.

With the venue hosting a variety of genres, it only stands to reason that the audio crew has miked an equally wide variety of instruments, from standard guitars to hand bells, to the 12-foot-tall Octobass that normally resides in the museum's Orientation Gallery. The facility owns a variety of house microphones – mostly Sennheiser evolution mics, MKH series, and a variety of Neumanns (KSM105s are typically the facility's go-to vocal mics), although a handful of Shure, Earthworks, DPA, Royer, and Beyerdynamics are also on-hand. Radial J48 and JPC DIs are also available to visiting acts.

The higher-end recording mics come in handy, as the facility can record shows for performers in finished mixes or Avid Pro Tools HD sessions for later remixing.

The venue can also handle multi-camera shoots and has its own video archive, so even acoustic sets presented without reinforcement will often times find mics placed on stage to capture performers. In fact, a number of exhibits around the museum feature video performances shot on-site in the theatre.

The venue itself is a lively space, although by design there's not much reflection that returns to the stage. The facility upgraded to a distributed Meyer Sound speaker system, built around two CQ-2 mains; three UP-Js variously used for a centre fill and delays; a pair of USW-1P powered subs; MM4XPs used for front fills and side balcony coverage; and a UP-4XP for rear balcony coverage. "We finished installing them on November 28," recalls Theatre Manager Ted Greenbaum, "and Manhattan Transfer played there the next night. The new system sounded amazing; we were really happy about it."

There's little in the way of audio gear on stage other than mics, as there's no monitor desk, though when stage monitors are required, a halfdozen UP-Js and a CQ-2 are available. Backstage, a stage management rack offers video playback, a two-channel com system based around a Clear-Com RM-702 headset/speaker station, and various Sennheiser wireless receivers.

Originally the house mix position was going to be in a separate room with no visual contact to the stage, where engineers would work off studio monitors. Concerned that they wouldn't get a feel for what the audience was experiencing, the audio snake was extended to a space behind the audience where the house mix position is now located, while the former mix room was converted to an additional control room with its own console that handles performance archiving.

Outfitting both the FOH and control room mix spaces, systems integrator Sound Image (Escondido, CA) installed an Avid Venue Profile console at front-of-house. Avid is also present in the form of a C|24 control surface

"The new system sounded amazing; we were really happy about it."

Ted Greenbaum,
Theatre Manager



that resides in the upstairs control room, along with 16 channels of Grace Design mic pres and separate video converters. There, mixers have the option of using the house's premix or working up their own clean mix, and a trio of video screens serve a variety of purposes, including showing the theatre from a variety of manned and robotic cameras.

Joke To Reality

Originally, the museum was the brainchild of Bob Ulrich, former CEO and Chairman of Target. As the story goes, Ulrich was planning to buy an artwork from

a museum when a friend joked, "For that much money, you could start your own museum." Having just recently visited the Musical Instrument Museum in Brussels, the comment gave Ulrich pause – and an idea. Today, taking in the sights and sounds of MIM, whether you're enjoying a vintage Palestinian oud, Eric Clapton's famed 'Brownie' Fender Stratocaster guitar, or a unique show inside the Theatre, it's clear that Ulrich's idea was a good one. **MIM**

Musical Instrument Museum
www.mim.org

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Microphones

The foundation of good microphone practice is technical knowledge.

Blažo Guzina provides a run-down of the basics for anybody just getting to grips with the wibbly bits...

EXPERT Witness

Microphones have different overall physical and electrical characteristics and are classifiable into three main groups, based on the physical principle of converting sound into an electrical signal: electrodynamic coil, electrodynamic ribbon, and electrostatic (or condenser) microphones.

Dynamic Microphone

The electrodynamic moving-coil microphone has a coil of finely wrapped wire precisely suspended between the poles of a magnet and attached to a diaphragm. Soundwaves drive the diaphragm, which vibrates in a high-level magnetic field. In the coil, this movement induces a voltage, which corresponds to the sound pressure.

Dynamic microphones are very rugged and handle high sound pressures without overloading. They are reliable and virtually never distort the sound signal. They are insensitive to extreme heat, cold, and high air humidity. Dynamic microphones can usually withstand extreme environmental conditions such as temperatures from -25°C to +70°C.

Ribbon Microphone

The electrodynamic ribbon mic has a thin metal foil in the form of a corrugated ribbon suspended in a magnetic field. Sound pressure variations displace the diaphragm, in which an electrical current is induced depending on the amplitude and frequency of sound. Due to the short length of the ribbon compared to the moving coil, its output electrical impedance is less than 1 Ω. This resistance is too low to directly connect to the microphone input of a mixing desk or recorder, so a step-up transformer is needed to increase the impedance up to the 150Ω to 600Ω range.

Due to constructional improvements, modern ribbon mics are suitable for outdoor and handheld use. They are prized for their warm, smooth, yet delicate sound quality.

Condenser Microphone

The electrostatic (condenser) microphone uses a transducer element consisting of a vibrating

diaphragm (very thin foil) and a fixed metal plate (back electrode).

These two electrodes make up a condenser (capacitor) charged by an externally applied voltage (polarization voltage) or carrying its own permanent electrical charge, as with an electret microphone.

When soundwaves vibrate the diaphragm, the capacitance of the condenser changes simultaneously, thus producing an output voltage that varies with the intensity and frequency of the sound.

Condenser microphones usually have a flat frequency response, high sensitivity and good ability to follow sudden, percussive sound events immediately. This is described as good transient response.

Condenser microphones require an impedance converter in the form of a preamplifier to match the very high output impedance to low impedance microphone inputs. This amplifier fits within the body of the microphone in order to prevent hum, noise pickup and the losses of the signal level due to the length of the circuit from the diaphragm to the amplifier.

Phantom Power

Condenser microphones need a DC supply voltage. Except for battery operated microphones, the voltage usually comes through the microphone cable. The positive (+) side of a DC voltage connects to both signal wires of a balanced line and the negative (ñ) side to the cable screen.

An exception is the electret condenser microphone. This type of microphone has the polarizing charge stored permanently within the diaphragm or on the backplate. No external power is required to charge the diaphragm.

Polar Patterns

Apart from the basic differences in the physical principle of operation, the main factor that influences the choice of a microphone is its polar pattern.

Polar pattern, also known also as polar response, is a chart that graphically represents

microphone sensitivity with respect to the direction of soundwaves arriving at its membrane.

A chart is usually plotted in the form of a 360° polar diagram, with the on-axis 0° direction clearly marked. It is possible to classify microphones into two main groups, based on their directional characteristics: non-directional and directional microphones.

In principle, a non-directional microphone is a pressure-operated electroacoustic transducer. Its response to acoustic sound pressure is omnidirectional, meaning that the diaphragm reacts equally to all soundwaves arriving at its surface, regardless of their direction.

A typical example of a directional microphone is a pressure-gradient transducer. This type has a bidirectional (or figure-of-eight) polar diagram. This means the microphone reacts to differences in pressure between the two sides of a diaphragm.

Ribbon microphones are the most common type with a bidirectional polar response. A metal ribbon diaphragm is equally sensitive to soundwaves arriving from front and rear axes.

All other known directional patterns are obtainable as a result of a combination of the aforementioned two main polar pattern types. The number of variations is practically unlimited.

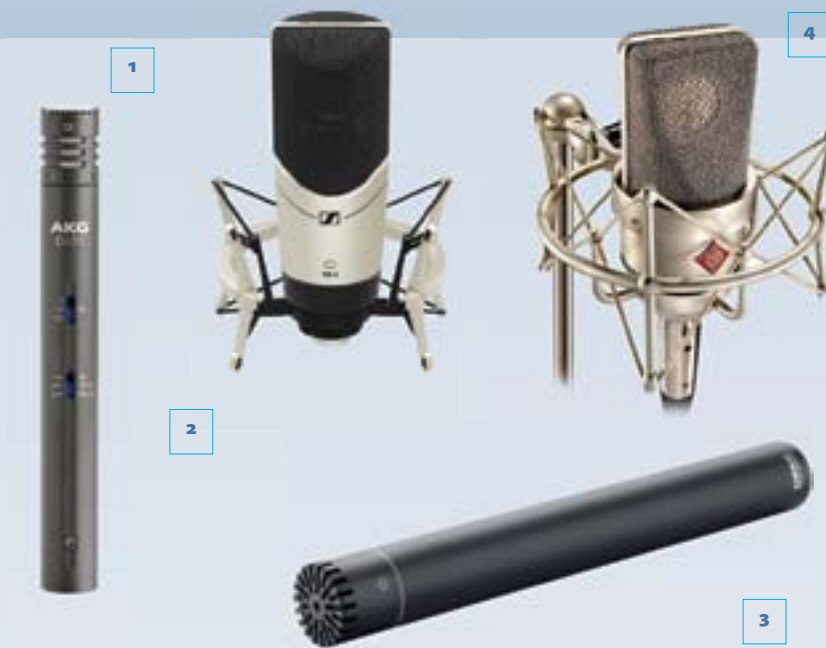
When the outputs of an omnidirectional (pressure) and bidirectional (pressure-gradient) pickup pattern are combined, the best known resulting polar responses that are obtainable are cardioid, supercardioid, and hypercardioid. Their common name is unidirectional microphones.

A unidirectional microphone is most sensitive to soundwaves arriving from one direction, in front of the microphone, but softens sounds from the sides or rear.

The cardioid microphone is sensitive to sounds from a broad angle in front of the microphone. Generally, it is about 6dB less sensitive at the sides, at 90° and 270°, and 15 to 25dB less sensitive to the rear.

Studio Microphones

If you want the best recording results, you have to pick the right microphone for the job. If you don't, you might as well be playing into a tin can. Have a look at our guide to studio microphones and you could transform a sub-standard recording into a fabulous one.



[1] AKG's C 451 B has identical acoustics to the popular original C 451 EB + CK 1, with improved specifications. Using an extremely light diaphragm, the new C 451 B is almost totally insensitive to handling noise. Other features include an all-metal body for protection from RF interference. It is particularly recommended for capturing signals rich in transients such as drums, instruments with a percussive sound, and acoustic guitar. A special limited edition version is currently available to celebrate AKG's 65th anniversary, hand-crafted in Vienna, Austria, with a 'TITAN-Look' finish, and which features a transformerless pre-amp.

The C 12 VR is an exact replica of the C 12 tube microphone, from the capsule sound to the original 6072A vacuum tube. The only difference is that its self noise and some components were optimised to meet current standards. It features nine remotely selectable polar patterns and a large-diaphragm capsule.

The C 414 is a very popular and widely-used microphone; new models C 414 XLS and C 414 XL offer nine pick-up patterns. A Peak Hold LED displays even the shortest overload peaks. The C 414 XLS emulates the sonic characteristics of the C 414 B-ULS, the longest-lived C 414 model, featuring a dynamic range of 152dB.

www.akg.com

[2] The MK 4 from Sennheiser is a large-diaphragm true condenser microphone for studio recordings. It features a one-inch true condenser capsule based on the acoustics of the e 965 high-end vocal mic, optimised for recording. The MK 4 is made in Germany, its transducer being manufactured in the same clean room as all high-end Sennheiser condenser capsules. Its capsule is shock-mounted internally to minimise structure-borne noise, and it has low inherent self-noise and high maximum SPL.

The MD 241 is a classic, well known in studios around the world. It has a five-position bass control, which enhances its 'all-round' qualities. The black microphone, with a black refined steel sound inlet basket, offers effective feedback rejection and easy handling due to pronounced directivity.

The MD 441 U offers accurate signal response and low distortion, even with the highest sound pressure levels. Its acoustic properties come as close as possible to those of a condenser microphone. It also has excellent feedback rejection, and spring capsule mounting provides low sensitivity to handling noise. Other features include a hum compensating coil, a five-position bass roll-off switch, brilliance (treble boost) switch, and an integral pop filter. It has an all-metal body with a black leatherette finish.

www.sennheiser.com

[3] There are currently 10 models in the DPA Reference Standard Microphone series. They all offer full modularity: any Reference Standard capsule can be transformed into a new configuration by combining it with one of three new DPA pre-amplifiers, providing signal integrity, noise elimination, and tight specifications.

The new electronics design is optimised for the capsules, as well as connection via long cable runs. It offers a dynamic range of up to 120dB. The CMRR (RF rejection) is between >60dB and >40dB. DPA says that these numbers could have been increased by adding a transformer to the circuit, but it would have meant a compromise in sound quality. The manufacturer also claims that the series will offer the best off-axis performance of any microphone, with smooth transition and intact cardioid behaviour.

www.dpamicrophones.com

[4] The TLM 102 from Neumann has a compact appearance due to its reduced overall size. It features a newly developed cardioid large-diaphragm capsule with a maximum sound pressure level of 144dB. It also has a fast transient response. A slight boost above 6kHz is useful for vocals in the overall mix. The capsule has an elastic suspension for the suppression of structure-borne noise, and there is a pop screen integrated into the grille.

Microphone Accessories

[1] sE Electronics offers the Studio Mic Pop Screen, a unique metal screen that is perforated and also louvered at a slight angle to redirect ultra-low frequency breath blasts, which are pushed past the side of the screen. It is also incorporated in the Dual Pro Mic Pop Screen, which is sE's solution to the problem of needing different pop shields to suit differing vocal performances. The device has a strong goose neck with both a standard fabric membrane and the pro metal pop shield on a hinge mechanism. They can be used either separately or together depending on the application.

www.seelectronics.com

[2] Rycote's Lyre upgrades can be used to upgrade your existing suspension. The patented Lyre are extremely robust and virtually unbreakable, as they do not use elastic or rubber components that are prone to wear and tear. The completely backward-compatible Lyre have replaced Rycote's original silicone O-rings suspension, and can be bought separately to upgrade older suspensions. A variety of kits and upgrades are available.

www.rycote.com

[3] Available for DPA's 4006A and 4006C Reference Standard microphones are the APE30RS, APE40RS, and APE50RS; 30, 40, and 50mm sphere-shaped Acoustic Pressure Equalisers. They give a mild modification of the microphone's on-axis and off-axis frequency responses, and a slight change in the direction-to-reverberation ratio. This gives recordings greater presence, nearness, and clarity on-axis, especially around 4kHz. The APEs are passive acoustic processors functioning as both spatial and spectral modifiers. They use diffractions on the surface to modify the sound field near the microphone diaphragm – a technique only possible on omnidirectional pressure microphones.

www.dpamicrophones.com

[4] The Primacoustic VoxGuard is a portable acoustic screen designed to reduce the ambient noise around a microphone when recording. The VoxGuard features high-density open cell acoustic foam to provide maximum absorption throughout the vocal range. An extra large high impact ABS outer shell keeps unwanted noise out, while slotted ports prevent excess bass build-up and resonance (commonly associated with stand-mounted absorbers). Once mounted, a rear access cable port allows any handheld or studio microphone to be articulated and directed at a specific source.

www.primacoustic.com



Microphone Accessories

[5] Radial Engineering's JS2 and JS3 are high performance balanced mic level splitters that allow the user to split a signal and feed multiple destinations at the same time. The JS2 is equipped with one isolated output, while the JS3 has two. Both contain a premium Jensen transformer, which features a nickel-laminated core for exceptionally low harmonic distortion without phase shift or limited bandwidth. The JS2 and JS3 deliver better than 90dB of noise rejection, and the signal path is 100% discrete.

www.radialeng.com



[6] König & Meyer's 26200 'Elegance' One Hand Microphone Stand features a combination of triangular-shaped sections. The integrated knurled screw is impossible to lose, and allows easy tightening and positioning of the microphone clip. The height of the stand can be adjusted soundlessly and easily by using the unique one-hand clutch. It is a lightweight stand, but stability is provided by the round base with integrated steel plate with plastic cover. The base also has a circumferential rubber profile to reduce undesirable vibration and footfall noise, and to prevent damage to flooring.

www.produkte.k-m.de

Studio Microphones

5



The TLM 103 is a large diaphragm microphone, using the transformerless circuit found in many Neumann microphones. The K 103 capsule, derived from the K 87 used in the U 87, has a cardioid pattern. The TLM 103 provides a dynamic range of 131dB.

Neumann's U 87 is a classic microphone, found in many studios around the world. It is equipped with a large dual-diaphragm capsule with three directional patterns: omnidirectional, cardioid, and figure-of-eight. These are selectable with a switch below the head grille. A 10dB attenuation

switch is located on the rear, which enables the microphone to handle sound pressure levels up to 127dB without distortion. An additional switch at the rear allows the user to change the microphone's cut-off frequency.

www.neumann.com

[5] Audio-Technica's flagship studio microphone is the AT5040 cardioid condenser. It features a smooth top end with controlled sibilance, offering four rectangular diaphragms (2 micron) which function together as Audio-Technica's largest-ever element, providing a combined surface area twice that of a standard

6



circular one-inch diaphragm. It has high SPL capability and extended frequency response. The low noise and wide dynamic range make it ideal for studio vocals. Advanced internal shock mounting decouples the capsule from the microphone body, while discrete components are selected for optimised capsule performance.

www.audio-technica.com

[6] The chic, lollipop-shaped SCX25 from Audix was introduced several years ago. The mic has been upgraded with modifications to the capsule interface. It is still a large

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Studio Microphones

diaphragm condenser microphone that includes a patented capsule suspension system, that acts as a built-in shockmount. In addition to being sold individually, the mic is now being shipped as a stereo pair, which includes an aluminum carrying case and special Audix Dflex piano mounts. www.audixusa.com

[7] Beyerdynamic's MC 840 is a very compact large diaphragm studio microphone with a gold vapourised double diaphragm and five selectable polar patterns (omnidirectional, wide cardioid, cardioid, hypercardioid, figure-of-eight). Based on the MC 740 microphone capsule, this new microphone has been equipped with an improved low-noise pre-amplifier and an impedance transformer without transducer. It also offers a two-stage roll-off filter (80 and 160Hz) to compensate for close miking effects, and a two-stage pre-attenuation (-10 and -20dB). It has elastic capsule mounting. www.beyerdynamic.com



[8] Blue Microphones' Spark is a cardioid, solid-state condenser microphone. Spark features a custom-designed condenser capsule with Class-A discrete electronics. A new feature found only on the Spark microphone is Focus Control, providing two different usage modes at the push of a button: the Normal mode (out position) providing increased low frequency sensitivity for recordings, along with the Focus mode (in position), for greater clarity and detail. It has a maximum SPL of 128dB. It is shipped with a custom-designed pop filter and shockmount. www.bluemic.com



[9] The PianoMic system from Earthworks Audio offers excellent sound with the piano lid up or down, with virtually no leakage from sounds outside the piano. At the heart of the system are two random incidence, omnidirectional, 40kHz high definition microphones. With a frequency response of four Hz to 40kHz, the

microphones deliver an excellent impulse response and extremely short diaphragm setting times. In addition, the microphones exhibit no proximity effect, regardless of their distance from the piano strings or soundboard. The mics also provide very high gain before feedback. www.earthworksaudio.com



[10] Lauten Audio's Atlantis FC-387 is a multi-pattern and multi-voicing large diaphragm FET studio condenser microphone. It features a multi-voicing switch for three distinct timbres – the options are F (forward), N (neutral), and G (gentle). Each voicing setting has a unique frequency response. The Atlantis also features Lauten's unique three-position attenuation and gain switch, with a +10dB feature for giving added presence and a -10dB pad switch to 'tame' loud sources. It offers three patterns: cardioid, omni, and figure-of-eight. www.lautenaudio.com



[11] Lewitt Audio's LCT Authentica Series are wired condenser microphones, featuring illuminated settings, noiseless push buttons, and automatic attenuation with clip detection. The LCT 940 combines the characteristics of a large-diaphragm FET condenser microphone and a tube microphone in one. The LCT 840 is an externally polarised dual-diaphragm tube microphone, while the LCT 640 is a reference-quality large-diaphragm condenser mic. The LCT 540 features a one-inch dual-system externally biased capsule and a dynamic range of 135dB. The LCT 340 is a 0.8-inch externally polarised condenser microphone, equipped with four-position low-cut filter and pre-attenuation slide switches. www.lewitt-audio.com



[12] The M 1030 from Microtech Gefell is a studio condenser microphone that combines modern large diaphragm capsule technology with the latest in semiconductor circuit topology. The pick-up pattern is perpendicular to the direction of the microphone axis (side addressed). The condenser

Microphone Accessories

[7] Studiospares' RED 110 is a development of its RED 100 vocal microphone enhancer, intended for instrument microphones. It improves the sound of the acoustic space surrounding the microphone by allowing the sound waves to pass through several layers of differing materials, so the filter progressively absorbs sound energy keeping sound waves from bouncing back towards the microphone. The microphone protrudes through the screen filter and is held in place by a crocodile-style mic clamp. www.studiospares.com



[8] The Stedman Proscreen XL is an advanced patented pop filter design that offers a large six-inch diameter screen, with an ultra-fine rubber surround that does not interfere with vocal recording sound quality. The Proscreen redirects airflow downward away from the microphone capsule. The large openings in the metal screen allow vocal sound to pass through to the microphone unobstructed and uncoloured. As well as providing sonic advantages, the Proscreen can be washed between sessions. www.stedmancorp.com



[9] Triton Audio's FetHead is an in-line pre-amplifier providing improved sound for ribbon and dynamic microphones. The electronics are housed in a metal chassis with a balanced three-pole female XLR input and a balanced three-pole male XLR output. FetHead's circuit uses phantom power, but shields it from its input (and the microphone's output), offering effective protection to the microphone. Also available are FetHead Phantom, which allows phantom power to reach the microphone; and FetHead Filter, a version with a built-in 6dB/octave high-pass filter with a corner frequency of 220Hz. www.tritonaudio.com



[10] MTR Audio's PPS-48 is a unit providing 48 volts phantom powering for up to four microphones. The circuitry is housed in a sturdy steel box, which gives good screening against RFI and mains hum. The four outputs are rear mounted and the microphone leads plug into the front panel. Possible ground loops are rectified by the inclusion of a Ground Lift switch. The presence of 48V is confirmed by a front panel LED. PPS-248 is also available: a two-channel version of the same. www.mtraudio.com



Studio Microphones



capsule exhibits a smooth frequency response with a slight presence boost in the 8-14kHz range. The electronic impedance converter uses a new circuit topology, a design that reduces the noise floor to an extremely low level while also raising the maximum output capability.

www.microtechgefell.de

[13] The MicW T501 is an omni directional microphone that uses a large diaphragm capsule with a totally transparent pre-amplifier. The capsule is designed using copper housing and an 8-micron-thick titanium diaphragm, which offers a frequency response from 20Hz to 20kHz, with a 4-6dB soft boost around 8kHz. The T501 has a low noise floor of maximum 18dB and

an SPL handling capability of 130dB SPL peak. The T551 cardioid microphone is available in a stereo pair, and is also designed using copper housing and an 8-micron-thick titanium diaphragm.

www.mic-w.com

[14] The Peluso 22 47 LE limited edition is a large diaphragm condenser microphone styled after the Neumann U-47. It is equipped with a vintage German EF style steel tube, manufactured between the 1940s and the 1960s. With nearly identical specifications, this tube provides the same sonic qualities as the original U-47's VF14 tube. The 22 47 LE has nine polar patterns, controlled from the power supply.

Microphone Accessories

[11] Canford's S139 Shock-Absorbing Studio Table Stand has a very heavy round base and a high efficiency foam rubber shock-absorber base for maximum isolation from surface noise. The 75mm stem is detachable to allow mic clamps or goosenecks with a 3/8-inch female thread to be bolted directly onto the base with the supplied fixing bolt. The finish is non-reflective Nextel, which is hard-wearing and chip resistant and does not show fingerprints. The overall height is 120mm, and it weighs 4.4 kg.

www.canford.co.uk



[12] The Icicle is Blue Microphones' USB converter and mic pre-amp combo, which allows the user to connect any XLR microphone directly into a computer via USB. The Icicle features a studio quality microphone pre-amp, 48V phantom power, fully balanced low noise front end, analogue gain control, and driverless operation. System requirements are Windows Vista, 7 or XP, or Mac OSX.

www.bluemic.com

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Studio Microphones

The 22 47 Standard Edition uses the 6SJ7 American style steel tube to replicate the sonic quality of the VF14.

www.pelusomicrophonelab.com

[15] The RØDE NT1-A one-inch cardioid condenser microphone has a self-noise level of only 5dBA, making it ideal for vocal recording, as well as voice overs and environmental recording. It has a frequency range of 20Hz to 20kHz, and a maximum SPL of 137dB. It features a large gold-plated diaphragm and gold-plated connectors. A studio grade pop shield and shock mount is included, along with a premium 20-foot microphone cable, dust cover, and instructional DVD with recording tips.

www.rodemic.com



[16] The modular Colette microphones from Schoeps consist of two basic units – a microphone capsule and amplifier. There are a large number of possible combinations; with very few exceptions,

any type of capsule can be used with any type of amplifier. Schoeps offers 20 different microphone capsules, including omnidirectional, wide cardioid, open cardioid, supercardioid, and figure-

of-eight types, as well as a capsule with mechanically switchable patterns (omni/cardioid) and several capsule types for close pick-up of speech. There are six basic types of amplifier, including the standard phantom-powered CMC 6, and a vacuum-tube amplifier.

www.schoeps.de

[17] The sE X1 from sE Electronics has a hand-built capsule, large diaphragm capsule, with FET transformerless electronics. The microphone features a 10dB pad and a low cut bass filter, acoustically damping black paint, and a black rubber finish. With a frequency response of 20Hz to 20kHz, and a maximum SPL of 125dB, it has a fixed cardioid polar pattern. Standard 48V phantom power is required. sE says that the microphone is ideal for recording



lead vocals, acoustic guitar, strings, percussion or 'any other source instruments'.

www.seelectronics.com

[18] Shure's KSM44A is a premium, large-diaphragm, side-address condenser microphone with multiple polar pattern options. It features Prethos Advanced Preamplifier Technology for a minimum of self-noise – 4dB with the cardioid pick-up pattern. Prethos consists of sophisticated, extremely transparent internal circuitry architectures that enable seamless audio. It features dual large diaphragms, and a three-position low frequency filter.

The KSM42 is a large-diaphragm side-address microphone principally for recording voice. There are no switchable settings, but it has a maximum SPL of 139dB and a gradual low-end frequency roll-off built in.

www.shure.eu



[19] The Sontronics HALO is a dynamic microphone designed for use on guitar amps and cabinets. The HALO has a dynamic capsule suspended on four spring mounts within a circular frame. It is based on an enhanced version of the STC-80 capsule.

The DM-1B for kick drum (and the pencil condensers DM-1T for tom and DM-1S for snare) is another application-specific microphone. The DM-1B is a large-diaphragm, end-fire condenser that has been designed to capture and reproduce the various characteristics of a kick drum. It has a switchable -15dB pad that allows the microphone to deal with 155dB.

www.sontronics.com



[20] The Studio Projects CS5 is an externally polarised five-pattern (cardioid, wide cardioid, hypercardioid, omni, figure-of-eight) pressure gradient transducer microphone, with FET impedance converter. It has a 27mm capsule, with a diaphragm thickness of six micrometres. It features five selectable polar patterns, four selectable pads, four high pass filters, and four low pass filters for added control in various recording applications. It features a maximum SPL of 136dB.

www.studioprojectsusa.com



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"It's in this final stage of this evolution that Avid hopes to allow the professional to be more creative and make way for exciting future developments possibilities."

Simon Allen



Avid Pro Tools 11

Production DAW

All of us that use Pro Tools on a day to day basis – especially considering the history of Pro Tools over the past couple of years – will have had many questions about what direction Avid is going in and how it's all going to sit in today's very different industry. Sitting down for a detailed look at Pro Tools 11, I very quickly learnt that the last major releases and developments in hardware have been building up to this moment. This is, so to speak, the answer to those questions. Avid's message is very clear – Pro Tools 11 is a complete re-write and re-structure of the existing software, taking great advantage of the new hardware available today, to deliver, as they put it, "A quantum leap in creative power," and better workflows for today's challenging sessions and deadlines.

What's New?

The upgrade is built on 64-bit architecture and a completely new Avid core audio engine which, when combined together, can now deliver many times more processing power than Pro Tools 10 on the same hardware configurations. The benefits of this speak for themselves, giving you massive increases in the number of simultaneous virtual instruments and plug-ins for the most demanding sessions.

The new audio engine utilises something called 'dynamic host processing', which essentially relocates processing resources where they are needed to allow a much higher plug-in count. For example, if you have a track with a particular instrument for just eight bars perhaps, PT11 will only allocate processing power when it is needed, rather than for your entire timeline.

The new engine in Pro Tools 11 now also delivers the ability to do off-line bouncing, which simply wasn't possible with the 12-year old HD Accel hardware. This is for all mixes or stems that can be taken from any

bus or output. This is obviously a huge bonus for Pro Tools users, especially when running projects with quick turnaround periods. Some will see this as 'a long time coming', but the legacy hardware was always the barrier here. There is also a new separate hardware buffer size for inputs only, providing low-latency recording without having to adjust your session set-up or sacrifice plug-ins.

A major new feature available to HDX hardware uses is the new expanded metering. As well as the standard track meters, there are now mini-meters on channel inserts and send slates to help you see what's happening in your signal chains throughout your mix at a glance. Avid has now also included many metering standards including K-style metering, peak, RMS, VU, and PPM, etc. This will assist the user to fall in-line with broadcast specifications for example, and have a good understanding of loudness and how their audio is behaving. I think this is a great tool for the DAW, instead of relying on plug-ins or hardware that might or might not be available. It will be a standard you can get used to and rely on if you move between studios and set-ups. The new meters can display gain reduction as well, so you will be able to identify any potential issues in your mix from a global view. The notable absence here is metering for the new broadcast-specific True Peak and Loudness Unit standards. For that you will still need to spend extra.

A new Avid video engine enables HD video workflows directly in your timeline without transcoding. This is the same engine as is built into Avid's Media Composer, and along with the 64-bit architecture, Pro Tools 11 users will be able to collaborate directly with Media Composer editors. Basic video edits can also be carried out directly on the timeline. Avid says many video codecs and formats will be supported, and it isn't driven from Quicktime any more. This should mean that it will be a lot more solid without dropped frames. As part of Avid's attempt

From the Manufacturer:

"Pro Tools 11 represents a quantum leap in creative power. The newly designed architecture turbo-charges production with more plug-in processing, the ability to run more virtual instruments – and a host of new features – letting users create ambitiously, without holding anything back."

Chris Gahagan, Senior VP Products & Services, Avid

THE REVIEWER
SIMON ALLEN is a full time sound engineer and record producer. Previously studio manager at High Barn Studios in Essex, he is now based at City Studios in Cyprus where he is Senior Engineer and heads up the new music studio.

to boost creativity, a lot has been removed from the user-end of Pro Tools, and a lot more is calculated under the hood to hide complexity. For example, there are no more delay compensation settings – it is all taken care of for you, so you can just concentrate on the job in hand. This is a great little update as so many people were making mistakes using the delay compensation settings in the wrong way. Now it's seamless.

For further examples of version 11 being focused on saving time for professionals time, day-to-day, are many minor workflow enhancements. There is now a master bypass of all or some plug-ins with a single key command for fast AB comparisons. A new database engine for a new workspace window has been designed for better media management. The old workspace environment has long needed a fresh look and more functionality, so I am looking forward to seeing how well this performs.

Revealing Upgrade

Version 11 is actually the result of a couple of years of design and engineering at Avid. Some of this had to arrive on a drip feed – a gradual upgrade release program through versions 9 and 10. Now 11 is a much more intelligent piece of software. Avid has had to find a way to break away from the old TDM hardware, which was already running at its maximum thrust. It's in this final stage of evolution that Avid hopes to allow the professional to be more creative and make way for exciting future development possibilities.

This does mean, however, that the old TDM PCIe cards for Pro Tools HD and the blue legacy I/O interfaces are no longer supported when running version 11, which was expected and is in line with previous announcements from Avid. However, the



The new Pro Tools 11 Video Engine.

company will continue to offer upgrade packages and support for those customers still on legacy hardware. Avid will also be including a version 10 installation and license with every version 11 installer for free. This dual installation means you could potentially run version 10 as usual or version 11 native, but just monitoring through your existing hardware without any on-board TDM processing.

Due to the 64-bit architecture, RTAS and TDM plug-ins are no longer compatible. HDX cards are required for AAX DSP plug-ins.

There are many third party plug-in manufacturers that have already prepared 64-bit AAX and AAX DSP versions, and any third party with existing 32-bit AAX versions will find it easy to move to 64-bit.

Waves and UAD have announced that they will support AAX Native 64-bit, but not AAX DSP 64-bit. To help provide customers with the most up-to-date Pro Tools 11 compatibility information, Avid will be updating its plug-in finder web page (see information panel) when Pro Tools 11 ships to allow searches for all plug-ins that support AAX and AAX DSP 64-bit.

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Pro Tools 11 Offline Bounce.

The final reason for including two installers is that there will be a slight difference in gain structure and sonic dynamics when switching between a 32-bit version 10 session, and a 64-bit version 11 session.

To keep all Pro Tools users working together, and in case you've been using Pro Tools for years and have old sessions created in previous Pro Tools versions, Avid has confirmed it is continuing with bi-directional session compatibility through versions 5.1 to 11. Version 11 will intelligently substitute TDM and RTAS plug-ins for Native and AAX plug-ins in the most optimum arrangement to minimise delay compensation and processing power.

Finally, there is a completely new installation method that leaves a much cleaner spread of files into your system, which is another example of the lengths Avid engineers have gone to.

Conclusion

Avid has clearly acknowledged its responsibility to provide the modern professional with the tools they need for complete creativity. In the fast-paced industry we work in today it is, in my opinion, an excellent move for Avid to take a really close look at what we actually need from a DAW today. There are many minor changes from a user's point

of view, but they are all there to assist in making even the most complicated workflows much quicker to deliver. They've done this by very intelligently increasing processing power from a programming end and cutting down on our day-to-day tasks and the time spent on them, so we have more time and energy to spend on the production. The accumulation of all these changes gives us the most refined version of Pro Tools yet.

Some may view some aspects of this release as 'catching up with the competition', and Avid might have a hard time convincing certain customers of its importance. Those people miss the point. Pro Tools 11 brings everything together that we already have in terms of hardware and computing power and makes the most of it, so it can continue setting new standards in what's possible. Along with Avid's heritage and reputation for reliability, and based on the details I've seen, version 11 is set to be very solid and more user-friendly than ever before. This is a really significant milestone for Pro Tools and, potentially, for all DAWs. **AM**

New Features Include:

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Manufacturer

Avid
www.avid.com/plugins

Price Details

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"The situation really was perfect; I could record at night, then spend a couple hours the next day mixing and tweaking, just enjoying myself immensely – and come up with a superior product to hand off."

Chris Sullivan



JoeCo BlackBox BBR-64 DANTE

Multi-Track Recorder

When I switched to the light side and became a Mac convert, I didn't necessarily relinquish my dark PC ways to history. In fact, I spent much of my early Apple life finding the single most difficult way to accomplish rudimentary tasks because, well, what was audio – or any application on a PC – if multiple reboots weren't involved? With my penchant for seeking the hardest method to accomplish the easiest task firmly established, I took delivery of a JoeCo BlackBox BBR64-DANTE recorder. It's 'plug and play' for most people, I was told: an exercise in convolution for me, I expected.

Typically, this paragraph is where the reviewer will list a blizzard of inane, skim-worthy details about specifications, measurements, etc, coupled with sprinklings of marketing blather and hyperbole. Instead, I'm going to direct you to JoeCo's website joeco.co.uk so you can educate yourself. Instead, this little treatise starts with two guys knifing open a cardboard box, on site, under the gun and deploying this box for an important recording.

My partner in this adventure was noted monitor engineer and live broadcast mixer Jason Spence. Jason is most often found behind the mixing desk that lives on-stage or generating the broadcast mixes at award shows. I am a self-absorbed front-of-house engineer who is constantly seeking new ways to avoid leaving any permanent two-track recordings of my live mixes, as those always lead to interaction with band members involving their own narcissism.

Into this workplace dynamic, we add the JoeCo BlackBox BBR64 Dante.

When asked to review this device, I jumped at the chance. Simple multi-tracking with a device that did not require me to monitor one more computer screen during a show, but would allow me to later easily remix the tracks and pass off the finished, mastered stereo two-track appealed to me immensely. I've discovered that it's best to show up with the ability to 'roll tape' and make my own mix for submission, rather than relying on others who may have other more pressing concerns than the amount of snare in the mix.

THE REVIEWER
CHRIS "Sully" SULLIVAN is a quarter-century-long touring veteran, mixing FOH for such artists as Point of Grace, Steven Curtis Chapman and Amy Grant, among many others.

In Use

Scene One: Audio guys on fire in a lovely split-frame mountain cabin parked in downtown Nashville. The first and completely accidental test for the JoeCo BBR64-DANTE was an HGTV DesignStar remote shoot. Essentially it was a show in a pre-fab log cabin in a parking lot in Nashville. We knew ahead of time that we wanted to back ourselves up with our own recordings, as the

From the Manufacturer:

"With increasing interest in the potential of audio over IP, particularly for live performance/recording applications, we're finding that customer enquiries about the BBR64-DANTE have increased considerably during 2013. The 64-channel version was the latest BlackBox model to come to market during 2012 and it has been specified for a variety of projects including broadcast, rental applications, and live performance recording. We've enjoyed a fruitful collaboration with Dante™ creators Audinate, as well as receiving some excellent feedback from users, who love the simplicity of the set-up and configuration – and of course the reliability!"

Joe Bull,

JoeCo

production plan from the network had the broadcast, house, and monitor mixes all being generated from a single Avid SC48. We felt that was definitely a recipe for the main mix, if not all of the stems, to potentially get the shaft. We are both very aware of how things are prioritised: first, monitor mixes, to ensure performance; second, broadcast mix; three hundred and fortieth, audience house mix. It's just how things are, and don't let anybody tell you differently.

Prior to the show, we decided to use the FireWire stream from the Avid SC48 to record multi-track into Pro Tools then mix later. Simple. That was the plan. Plans, as everyone knows, tend to make really uncomfortable sounds as they explode in mocking technicolour.

Once on site, Jason and I spent what amounted to an eternity in 'broadcast time' trying to make a MacBook play nice with Pro Tools and the SC48, without much success. As it turned out, that was simple pilot error. Through our panicked haze – and under the producer's threat of using the stereo house feed for the broadcast mix – we came up with an alternate plan. Simply by chance, I had the DANTE version of BlackBox on our bus, ready to be tested at a later show. It was still sealed in the box, the directions and manuals folded neatly and awaiting a leisurely perusal. For the unfamiliar, DANTE is a software, hardware, and network-based delivery protocol for uncompressed, multi-channel, low-latency digital audio via standard Ethernet networks. Thankfully, there is also a DB25 on the back of the BlackBox DANTE unit for eight analogue input channels. Our band input list that day? Seven inputs. Let's rock.

There were only two problems with our plan. Firstly, we didn't have a DB25 snake with us; and secondly (and more worrisome) was the fact that none of us had the slightest idea how the unit worked. At all.

BlackBox At A Glance

There are currently six models in the JoeCo BlackBox Recorder range. Four of these are variations on the BBR1, the 24-channel recorder. These are the BBR1U (designed for insert-point connection with unbalanced analogue I/O via D-types, plus eight insert returns on TRS jacks), BBR1B (for balanced insert or direct out connection via D-types), the BBR1A (lightpipe connections plus BBR1 analogue I/O), or the BBR1D (AES I/O plus BBR1 analogue I/O).

The 64-channel BlackBoxes are the BBR64-MADI and the BBR64-DANTE. Both units can record 64 channels to the single USB drive and also include eight balanced analogue inputs for additional flexibility (56-channel MADI + analogue extras, for example).

The first issue was easily remedied once we found a DB-25 cable source. While that was en route to us, we familiarised ourselves with the unit as quickly as possible. Remember how I said I always seek the most technically difficult path? That was my method here; in fact, I may have even suggested throwing the manual away (not really). What I did do was start pressing buttons as quickly as possible and immediately declared the unit broken. One of our younger, yet wiser, compatriots was reading the manual that I had discarded, and pointed out the controls were touch sensitive – perhaps I should quit poking them and press them instead. Well played, English engineers, well played... touch sensitive, indeed.

After mastering that, I realised the controls instructed me on exactly how to operate it. Play, stop, record, and meter. Of course, it helps to plug a record drive into it. In hindsight, that seems a bit silly. My A2 pointed out that “Air is an imperfect medium to record to”, and, “Did I want him to attach a drive?”. “Of course, good man, of course,” I confirmed, “I was merely testing you.”

Next, 16GB thumb drive inserted, the error code ‘drive not formatted’ was corrected by pressing the ‘format drive’ button (FAT32); inputs selected as ‘analogue’; seven-band inputs and one audience mic magically derived and routed from desk. I pressed ‘record’ and uttered the lie, “We’re ready”, having zero expectation that this would work.

We hadn’t test recorded or confirmed anything. We were just rolling with big smiles on our faces and thumbs up to our overlords, while our eyes surreptitiously darted to the BlackBox and the tantalisingly red bar across the screen that simply promised ‘recording’.

As you may have guessed, it was. It was really that simple. Eight .wav files were recorded, and one thumb drive was handed off to our mixer. I was really starting to like these English guys, including their strip club-style logo splashed across the unit.

Scene Two: Facilitating live ‘board mixes’ on tour. Headly from our HGTV experience, I was anxious to use the BlackBox as a way to increase the quality of the live ‘board mixes’ I was generating during our normal shows. To be fair, everyone except for band folk realise that a true ‘live from the house mix’ recording is an exercise in futility. Large arena shows every night always have a better chance of success, but a small room one night will yield an electric guitar light in the mix, or a lack of subs the next will result in a kick heavy recording. Setting the record mix up on auxiliaries is a solution, but usually results in engineers mixing the board tape during the show to please the band, as opposed to mixing for the audience (as they’re being paid to do).

It’s not as if I wasn’t able to multi-track prior to the JoeCo BlackBox. I used Adobe Audition quite a few times for that application. But, as I mentioned before, I really didn’t enjoy having an additional, dedicated computer just for recording, plus it added one more distracting screen on



my rack top. To me, the idea of a dedicated, straight-to-disc recorder was an elegant solution to a problem I didn’t even realise I had. The situation really was perfect; I could record at night, then spend a couple hours the next day mixing and tweaking, just enjoying myself immensely – and come up with a superior product to hand off. I’d just sit back afterwards and wait patiently for the accolades to be showered on me. There was just one hiccup; I carry a Midas XL4 because I’m difficult and curmudgeonly and the BlackBox we had was made for DANTE interface.

Fortunately, my artist happens to employ the most useful and competent mixer in the world, next to me. Jason is absolutely manically detail-oriented, has a background as a studio engineer, and he also happens to be mixing monitors on a Yamaha PM5D. Problem almost solved. Audinate, the designers and developers of Dante, make a Yamaha compatible mini YGDAI called DANTE MY-16-AUD, that outputs 16 bi-directional channels, not the full 64 channels of audio data usually available on a DANTE network (for the record, it records at 44.1kHz and 48kHz directly to Broadcast .wav files. Higher sample rate recording is also accommodated at a reduced track count).

The only issue was fitting a rock band into 16 inputs. We decided to make a basic two track mix, leaving 14 channels for individually tracked inputs. Kick, Snare, lead guitars, lead vocal – all were individually recorded while basic, ancillary things resided in the two track mix.

Pretty much we accomplished the internal routing for the PM5D via Audinate’s DANTE Virtual Soundcard (DVS) software (provided with the DANTE MY-16-AUD). This was a simple one-time arrangement done with a laptop attached directly to the Audinate YGDAI card.

Once all was configured, we simply hit ‘record’ and had a show. The next day I removed the USB2 drive from the BlackBox and plugged it into my computer, launched Adobe Audition and mixed a board tape, maybe with a little pitch correction and sweetening added for good measure.

However it happened, it became a relatively seamless and invisible operation to repeat. We recorded every night that we had the unit, and simply erased the old tracks to free up space for new ones when required. No computer freezes, no lost data: it simply and very elegantly worked every night we asked it to. It worked so well that we began talking about archiving tracks for a possible future live release.

Summary

In the end, we had to give back our BBR64-DANTE, but we could purchase a pair of BBR1B units, the analogue I/O version; in fact, the BBR1B’s channel I/O arrangement is such that the signal loops through the BBR1B and back out again, meaning we could take a line level signal first and hit the console second. For that situation, JoeCo has thoughtfully

built in a failsafe, which allows audio to still pass should the BlackBox lose power. A very impressive feature if the unit ever gets unplugged.

Much of the JoeCo design philosophy seems to be that way: little things that make life easier without a lot of fanfare. My favourite one? When the clock strikes midnight, the files will still be date stamped from the evening the show started. It may not appear that clever, but imagine my show starts at 11:00 PM and ends the next day at 2:00 AM. Technically, my files should have two dates for one show. If I was to shuffle through my file inventory after many shows, I’d notice that there were actually multiple files for the same day, but for different shows. There would be files date stamped from the morning part of one night, and the beginning evening of another night. Thankfully that is not an issue.

One more nice function: virtual soundcheck on an analogue console. In my intended deployment, I’d simply slave one unit to another and record all my inputs and effects from direct outs; for the following soundcheck, I’d have the option of simply playing back the tracks as a virtual soundcheck. Afterwards, I’d archive the files and start again. Not a seminal idea, but still a useful one.

I’m a fan of great gear, but I also love equipment that helps me succeed as a professional. In that vein, I’ll share one last pertinent anecdote about JoeCo and its products. I mentioned before that my partner at the other end of the snake is Jason Spence. In addition to a myriad of other things, he’s an in-demand broadcast mixer.

One of his clients is the NBA. Recently, at an all-star game, he encountered a situation that could have been disastrous; the mixes that he was handing off were crushed by a broadcast limiter whose threshold was inadvertently set too low. Since no one would admit to being the downstream culprit, he had to find a copy of the mixes that hadn’t been sent to air in order to clear his name. He found the mixes (rescued by the video guys) and he was able to present what was actually sent versus what was aired. After being cleared and rehired for next year, one of his first comments to me was, “Next year we specify JoeCo BlackBoxes and they’ll quietly sit next to me as insurance.” And actually, that’s how I feel about JoeCo in general now: easy insurance, sitting quietly next to me. **FAW**

Information

Feature Set

- 64 channels record/replay from Dante network
- Records at 44.1kHz, 48kHz to Broadcast WAV
- Up to 96kHz at reduced track count
- Connects to any Dante-enabled device
- Optionally records eight channels of analogue + 56 channels of Dante

Manufacturer

JoeCo – www.joeco.co.uk

Price Details

GB£2,695.00 (exc.VAT)

"The D12VR is not really a vintage re-issue; it's a totally different animal.

Inside either a 22- or 24-inch kick in dynamic mode, the D12VR sounds different than a D12 or a D112. It's more scooped, without a 'boing' in the mids..."

Rob Tavaglione



AKG D12VR

Reference Dynamic Microphone

The D12 was AKG's first dynamic mic, produced in 1953 – the D12E, the 'Motown mic', as it became known – that brought a low-end optimised dynamic mic sound to market. Now heard on countless drum, bass guitar, and instrument tracks, the D12 was eventually succeeded by the nearly ubiquitous D112, the green-bumpered, egg-shaped mic that can handle exorbitant SPLs.

With the D12VR, this considerable legacy has been updated to offer a new approach to kick drum recording: capturing ample bottom and top, with some degree of control over such a tricky response dichotomy. The D12VR meets the challenge with a dual-mode, built-in EQ design.

Features

The D12VR employs a thin diaphragm and a transformer similar to 1970s-era C 414s within a large squarish body with rear exit XLR connector (parallel to the stand), particularly designed for low-profile kick drum mounting. The most interesting part about this mic is how it offers four different tonal options in one mic. First it can be used as a straight dynamic mic, capable of high SPL handling and hot output. However, when 48V phantom power is applied, it drops the output by 10dB and applies an active EQ circuit with three different settings. Mode 1 (green LED) has a bottom end boost and scooped mids; Mode 2 (red LED) has scooped mids only; and Mode 3 (blue LED) adds a high frequency boost centered at 6kHz to the bottom boost and scooped mids.

In Use

The D12VR is not really a vintage re-issue; it's a totally different animal. Inside either a 22- or 24-inch kick in dynamic mode, the D12VR sounds different than a D12 or a D112. It's more scooped, without a 'boing' in the mids, though not as smiley-hyped as a Shure Beta 52 between the 50 to 60Hz fundamental and the 4kHz beater click. It's also not as mid-scooped and aggressive as an Audix D6, but with nice, extended lows, and a top defined by the 6kHz dip in the middle of the boost.

Apply phantom and the D12VR lights up green; this low-boost setting is quite useful as it can put the gravitas in where there isn't any. It can also negate the need for the outside kick mic when in a hurry or track shy. It can take a boxy, no-resonant head punk rocker and give him some 'oomph'. Conversely, if your drum has ample

thump, this setting will likely be too much bass in your face. Mounted outside the resonant head, this setting provided the fundamental I was looking for, but with too much off axis colouration (a bass drum 'tunnel' or 'tent' is likely needed).

In my use, the red mid-scoop setting received more use than I initially suspected. Its tight leanness favors an E-V RE320 with the mid-scoop filter in, all punk-rock friendly and punchy (though admittedly not as punchy as the RE320). On a 24-inch kick with no resonant hole, no mounted toms, and plenty of pillows inside, I still received enough bottom end using the red setting.

The blue setting, with a broadly smiling, hyped frequency response, will likely be utilised by most modern users. It has a big, round bottom, a svelte middle with notable absence of boxiness, and a detailed, clicky top (not as clicky as a Beta 52 or 91), with perhaps just a little flab in the upper lows; all together, it's incredibly attractive – huge, solid, aggressive and detailed.

Summary

Between different kicks with different resonances, a wide variety of heads on the market, a multitude of beater/pad combinations, and every genre of music having different kick tonal characteristics, no one go-to kick mic is going to meet all professional needs.

However, the D12VR does offer as much, if not more, versatility as any other single bass drum mic available. It's not a cheap microphone, but solidly designed, and – based on the longevity of other AKG kick mics I've used over the years – I think it's a wise choice for a kick drum mic. **A**

Information

Feature Set

- Cardioid polar pattern
- 17-17000 Hz, 164db max. SPL, 1.2m V/Pa
- Balanced XLR

Manufacturer

AKG – www.akk.com

UK Distributor

Sound Technology – www.soundtech.co.uk

Price Details

GB£349.00 (inc.VAT)

THE REVIEWER
ROB TAVAGLIONE
owns and operates
Catalyst Recording in
Charlotte, NC.

"...here is an accurately modelled collection of all three versions of one of the most praised studio compressors. Full of its original sonic colour and character, but with three of the highly sought after model revisions..."

Alan Branch



Universal Audio LA-2A

Classic Levelling Amplifier

The UAD Teletronix LA-2A Classic Collection features three definitive versions of one of the all-time classic studio compressors. The Teletronix LA-2A has long been a studio classic, as the original 'go to' vocal compressor, and is still hand wired and produced by Universal Audio today.

There are three classic models in the collection: LA-2A Silver, LA-2A Gray, and the original LA-2. The compressor was a breakthrough because of its optical T4 photoresistor, which gave a very unique response behaviour. Its slow attack and release curvem producing a smooth and almost transparent gain reduction was perfectly suited to handling vocals. Add in the transformers and amplifier circuit design, and the LA-2 with its simple one-knob operation was an instant hit.

The difference between the models centre mainly around the response timing, but other factors such as the knee compression, headroom, distortion onset, distortion structure, program, and frequency dependence – as well as the years of manufacturing – create further difference between the actual hardware. The original LA-2 is very rare and has the slowest response, giving a very mellow and smooth sound, while the update LA-2A Gray was the tweaked version released several years later with a faster time response; then the later Silverface made by Universal Audio's founder Bill Putnam in the late 1960's after buying the patent. This LA-2A version is arguably the most widely used version with its fast time constants, as it is more versatile – great for crunching down on drums.

Overview

As a UAD Powered Plug-in, installation is very straightforward, as all of the plug-ins are bundled as part of the company's integrated hardware/software system. All three of the labelled 'Teletronix' plug-ins have the same principal controls: Peak Reduction sets the compression threshold, then there's makeup gain and a metering switch for +4 or 10dB Output Gain or Gain Reduction, and last there's sidechain emphasis (high-pass filter).

Using any of the LA-2A versions couldn't be simpler: it's a one knob, dial in, then sit back and listen kind of affair.

The magic that occurs from the T4 photocell has been fully captured, it seems, with its multi stage release, as the decay slows down the further the release goes on. The transparent soft knee richness is all there, just as you would expect from this illustrious unit. The best thing about this collection of the LA-2A is the choice of the versions: the differences are immediately noticeable once you match the levels. The LA-2 has a very slow response, useful on legato material, so not for fast vocals or instruments. While the LA-2A Gray is slightly faster, it immediately feels more

From the Manufacturer:

"While our original LA-2A plug-in provided a breakthrough rendition of the original hardware, we've learned a lot about analogue emulation over the past 10 years. Our new Teletronix LA-2A Classic Leveller Collection adds tube amplifier and transformer modelling, improvements in T4 gain reduction non-linearities, and superior time constant behaviours. Put simply, these are the most musical and authentic LA-2A emulations ever created."

Bill Putnam Jr.,
Founder/CEO,
Universal Audio Inc.

immediate and punchy; while the Silver is faster still, so can cope with most audio sources you throw at it.

The differences are more noticeable when trying alternate material: driving drums through the Silver was punchy, and a great fattening of dynamics could easily be achieved; while the Gray sounded better suited with pianos and guitars. The LA-2 had a very creamy effect on smooth vocals and flowing lead instruments. The emphasis control is a small but very useful effect, dialling counter clockwise focuses the compression on the high frequencies – it's a perfect adjustment when you're looking for creamier top-end sound.

Conclusion

The beauty of UAD's Teletronix LA-2A Classic Leveler Collection is the ability to compare the different classic models. I can't ever remember seeing more than one real hardware unit at the same time, especially the rare LA-2. This is very exciting – an accurately modelled collection of all three versions of one of the most praised studio compressors, from the original LA-2 and its ultra smooth release to the upgraded Gray and Silver LA-2A models, with faster response times and each with their own distinctive compression action.

I have to praise Universal Audio for not only pursuing a better development of its modelling technique, but also the thought behind putting together a wonderful collection. Okay, the LA-2A collection is a very simple compressor (which makes me wonder quite why there are presets), but the differences in response time are huge, and are enough to cover all instruments between them. If you've ever wondered what compressor would be a good investment, this UAD Teletronix Classic Leveller Collection should be on your shopping list. **UAD**

Information

Feature Set

- Superior plug-in emulations of revered Teletronix LA-2A Leveling Amplifiers
- Includes three historic versions – LA-2A Silver, LA-2A Gray, and original LA-2
- Models entire electronic path for analogue colour and character
- Easy-to-use Peak Reduction and Gain controls

Manufacturer

Universal Audio – www.uaudio.com

UK Distributor

Source Distribution – www.sourcedistribution.co.uk

Price Details

US\$299.00

ALAN BRANCH is a freelance engineer/producer and ex-member of the On U Sound Crew. His long list of credits include Jamiroquai, Beverley Knight, M People, Simply Red, Depeche Mode, Shed 7, Sinead O' Connor, Bjork, and Sade. www.alanbranch.com

“It says something about a pair of headphones when they’re able to remind you of just how good another bit of kit is.”

Jerry Ibbotson



Studiospares M2000

Studio Mastering Headphones

Own brand. Two words that are guaranteed to strike fear into the heart of anyone with even a passing interest in technology of any kind. I personally shudder at the memory of being bought an own brand personal cassette player (i.e., a Walkman clone) about 30 years ago. It came from WH Smith, and the sound was truly appalling even by 1983 standards. There was more hiss than a basket of angry snakes.

With this in mind I wasn’t getting my hopes up particularly high at the prospect of testing out a pair of Studiospares M2000 headphones. Yes that’s right, Studiospares. The all-things-sound people with the catalogue that’s a veritable Christmas wish-list for boys like me. But much as I love the shop, would I feel the same about the cans?

Overview

The M2000s are open back mastering headphones, differing from consumer ‘phones in that the audio they reproduce is intended to be neutral and uncoloured. In the same way as studio monitors give you ‘warts and all’ sound (compared to hi-fi speakers), so the M2000s aim to let you have it straight – in either ear.

They’ve got 42mm drivers with a frequency response of 10Hz to 26kHz. I’ve never thought power was too crucial to headphones (I’d quite like not to be deafened), but these have a sensitivity of 98dB and an impedance of 64Ω.

They come nicely packaged in a padded box and are fitted with a decent length lead that ends in a 3.5mm jack; a 6.3mm adaptor is also supplied. The construction is a mixture of metal and good quality painted plastics with ‘protein leather’ earpads that are replaceable. Included in the box was a spare pair of these, which naturally were hung from my ears to allow a brief Princess Leia impression. “Take this to Obiwan...”

The design is actually quite funky, in a retro kind of way. Not retro in a Philippe Starck manner, but in a “my dad had a pair of those in 1977” style. They’re quite big (think Cyberman) and engulfed even my larger than average ears with one slip of the extendable headband. But for all that they’re very comfortable and it’s easy enough to forget you’re wearing them after a while. Imagine a pair of DT 100s with a darker finish.

Here’s the rub: for all my mild mocking of own-brandness, they sound great. I’ve had them hooked up to a Focusrite Scarlett USB audio device and have

From the Manufacturer:

“The M2000s are our new professional grade mastering headphones featuring an open-back design ideally suited for mixing and mastering applications, where bleed isn’t an issue but the utmost accuracy is required. Featuring breathable protein leather ear pads designed for long-term comfort, convenient detachable cable, and 10Hz to 26kHz frequency response; they come as standard with a minijack to stereojack adaptor, two spare earpads, and a soft carry case. The M2000s perfectly complement our bestselling closed-back M1000 headphones.”

Richard Venable,
General Manager,
Studiospares

been piping all manner of audio through them. First I tried some sound effects that I was laying to a video: the raucous mayhem of a WRC car going through its paces.

I recorded these FX a few years ago, and the M2000s were able to reproduce all the violence and terror I felt as I was hurtled round a test track by a nonchalant Frenchman. Then I played back some audio of a short film I’ve been working on and spotted some noise that my usual cans couldn’t detect.

Next came a tedious job: transcribing an hour-long round-table discussion that I’d recorded on my trusty Olympus LS5 for an Audio Media article.

It says something about a pair of headphones when they’re able to remind you of just how good another bit of kit is.

Conclusion

I didn’t think I’d get worked up about a pair of headphones, let alone a set lacking some shiny brand name. But the M2000s are genuinely impressive. A part of that has to be their physical presence, but size alone would be nothing unless it was backed up by great audio. And it is. Sounds are truly neutral and if you want an exciting listen, go elsewhere. But you don’t buy headphones like this for aural excitement, any more than you do studio monitors. You want honesty and the ability to reproduce sound without wearing you out. You could be listening to these for long periods so you want comfort, both from the physical construction and the sound. Tick yes to both boxes.

Own brand. It’s the new designer label. **WIN**

Information

Feature Set

- Breathable protein leather ear pads
- Detachable cable with screw-tight plugs
- 42mm neodymium driver units
- Open-back design
- 10Hz-26kHz frequency response
- 64Ω impedance

Manufacturer

Studiospares – www.studiospares.com

Price Details

GB£69.95 (inc.VAT)

THE REVIEWER

JERRY IBBOTSON has worked in professional audio for more than twenty years, first as a BBC radio journalist and then as a sound designer in the games industry, working on more than 30 titles. He’s now a freelance audio producer and writer.

"There's less environmental sound when recording voice; less reverb from the 'room', and less background noise. The voice itself is clear and crisp without being sibilant."

Jerry Ibbotson



Rode VideoMic

DSLR Video Microphone

Australian firm Rode produces a number of microphones aimed at the DSLR video market. It's probably a good move – I know of a technology evangelist within BBC News who's looking at the possibilities of DSLRs being used in video journalism. However, one thing that tends to let the side down is the poor quality of built-in mics – hence the demand for separate mics to sit on the camera hot-shoe.

For the new incarnation of the VideoMic, Rode wanted to take things further than its has before, with a proper floating cradle to keep the handling noise at bay. The manufacturer took a look at what was on offer from British firm Rycote; thus this product marries a short shotgun microphone to a Rycote-licensed Lyre suspension and hot-shoe mount. It's not strictly aimed at audio pros – instead Rode says, "You don't need to be an expert to get professional results." reassurance for the less-than audio-savvy videographers out there.

The VideoMic connects with a neatly coiled lead and mini-jack plug. It's powered by a PP3 9v battery, and Rode claims over 100 hours of battery life. There's a switchable high pass filter (set at 80Hz) and a pad (-10/-20dB). A foam windshield sits at the business end of things, and the whole ensemble locks onto a standard hot-shoe fitting.

First Impressions Count

First impressions: Well, the mic has a plastic body, which is a little disconcerting at first, though I can see that this may be necessary to keep the weight, and the cost, down.

There are essentially two units that make up the VideoMic. The microphone and powerpack are one moulded part (in black), and the Lyre suspension (in red) is another. The two are held together with crosshead screws. The main switch for power and the High-Pass Filter sits at the back. The dip switches for the pad are hidden away inside the battery compartment. And when I say hidden, I mean it. These are possibly the smallest dip-switches I've ever seen (well, squinted at). The smallest of jeweller's screwdrivers would be needed to adjust them.

The instruction manual explains different cable routing depending on whether the mic socket on the camera is to the left or right. As it comes, it's set up for a left-hander, which suited my Nikon. With the mic in place I began some initial shooting.

In Use

The first thing that was apparent was that the Rode produces a much stronger output than the standard microphone (if I can even bear to call it that). This meant my initial takes were over-modded and clipped. The Nikon uses fixed gain settings of Low, Mid, and High; and a quick

switch to Low meant a much better result was achieved.

The sound is much, much better with the VideoMic than with the standard microphone. I don't know the exact response field for the Rode, but it's narrower than the camera's mic. There's less environmental sound when recording voice; less reverb from the 'room', and less background noise. The voice itself is clear and crisp without being sibilant.

The camera sound, in contrast, is hard and wooden, with an almost painful edge to it. Plugging the Rode in softens this measurably, and the audio is now something you can actually bear to listen to. I shot all of the material hand-held, positively inviting handling noise. But there wasn't any. Even when deliberately waving the camera around the Lyre suspension did its job. Compare this to using the camera mic, which picks up any contact with the camera body or lens.

Conclusion

Despite initial misgivings about the construction of the VideoMic, it's impressed me. It's not designed to replace a full-on audio recorder and engineer, and isn't aimed at those shooting features or documentaries. But for other users it's pretty darn good. News journalists with a VideoMic-equipped DSLR would be able to capture broadcast quality footage with high quality audio to match. In a tight squeeze (like a press scrum) it could be a killer combination.

The Rode VideoMic (with Rycote Onboard) raises the bar on DSLR sound and throws down the gauntlet to other manufacturers. **A++**

From the Distributor:

"We love the VideoMic. We use them here at Source to make our product videos, and they're mustard on DSLRs. You can easily put them on higher-end cameras too with the RØDE 'VXLR' 3.5mm Jack to XLR converter. On DSLRs, just make sure you turn off Auto Gain Compensation if it's on by default. You can mount it on a pistol grip or on a tripod too, and experiment with the RØDE VC1 Extension cable for getting it off-camera, right up close to your subject, for even less ambience and the richest sound. Everyone should have at least one!"

Alex Theakston,
Marketing Co-ordinator,
Source Distribution

Information

- Feature Set**
- High pass filter (80Hz)
 - 100+ hours battery life
 - PAD (-10/-20dB)
 - Integrated Rycote Lyre suspension

Manufacturer
Rode
www.rodemic.com

Price Details
GB£ 92.99 (inc.VAT)

JERRY IBBOTSON has worked in professional audio for more than twenty years, first as a BBC radio journalist and then as a sound designer in the games industry, working on more than 30 titles. He's now a freelance audio producer and writer.

Play-Out And Automation

Getting television programmes from the TV studio or a live location has always been an involved process, but with multiple digital channels and new media platforms it is getting even more complicated. In the first of a two-part look at channel transmission and delivery KEVIN HILTON examines play-out and automation.

The transmitter personifies the old image of how television signals got to the home. Our favourite programmes would be beamed from a tall antenna looking a bit like the Eiffel Tower (which has doubled as TV transmitter in its time) and arrive on the TV set in the corner of the front room. This is still a viable form of distributing TV channels, but is now fully digital in the form of DTT (digital terrestrial television). It has also been joined by satellite and cable TV, with IP (Internet Protocol) streaming to smartphones, tablets, and other mobile devices being the new kid on the technological block.

All these innovations have combined to change the way programmes are distributed by the broadcasters for final transmission. For many years the standard model was for each broadcaster to have its own master control room (MCR), from which live transmissions or pre-recorded programmes would be relayed to the transmitter over cable or radio links.

While many broadcasters, such as the BBC and other public service organisations, still maintain a MCR, the trend is for most if not all play-out to be outsourced to a third party facility. These companies, which include Arqiva and Red Bee Media, can accommodate a large number of channels for different broadcast operations, distributing them to many platforms and destinations, from traditional terrestrial broadcast to mobile and streaming.

In the earlier days of TV, programme play-out was a relatively simple matter. A videotape of a show would be loaded into a player, which would be routed through a vision switcher that in turn was connected to the relevant link to get to the transmitter. This basic method sustained for many years, but the coming of more channels made play-out a labour intensive process, so automation was developed to make it more efficient and to use operators' time and skills in the best and least mundane way.

The first play-out automation systems retained the previous basic concept of a vision switcher routing different sources, but with programmes coming from, initially, multiple videotape players and then one machine with the capability to deal with many tapes being loaded automatically.

Mechanical equipment like the Sony FLEXICART, based on a carousel that was programmed to load tapes according to a set schedule, became the norm at play-out centres as satellite, cable and, latterly, digital terrestrial broadcasters began to transmit more and more channels. As automation control became more sophisticated the vision mixing aspect was integrated, usually in conjunction with a video server.

Moving In Automation

While FLEXICARTS are still used today, often for ingesting tape into a modern digital

"The IT-based component of such equipment has been distilled down into more self-contained devices that generally come under the heading of channel in a box. As with many aspects of broadcast technology today, IT is the foundation of modern automation systems but with a specific application on top to make them applicable."

infrastructure, play-out is now moving towards file-based operations, with programmes stored as data on massive media servers. Over the past 18 months broadcasters have begun relying on installations with fewer moving parts and more integration of previously disparate devices.

The basic concept of automation is relatively simple. A play-list of programmes is drawn up, with links to where the material is on the server, after which the operator only has to press 'go' to get everything going. The complication comes because not all channels can be only a series of shows linked by continuity and commercials. Broadcasters like the BBC and ITV need to be able to break into schedules to react to breaking news stories and other fast moving events. Any channel carrying news and sport needs to be able to work in real-time, so there has to be semi-automation to react to live, changing circumstances.

In these situations higher-end enterprise systems, so-called best of breed, are used. Among the manufacturers in this part of the market is Snell, formed in 2009 from the merger of Snell & Wilcox and Pro-Bel, with the Morpheus large-scale broadcast play-out product the centrepiece of its automation offering. Other leading systems include the Miranda iTX (formerly OmniBus), now part of the Belden Group, and Pebble Beach Systems with the scalable Marina.

Computer control and media asset management are key elements in these high-end systems, which combine hardware and software. The IT-based component of such equipment has been distilled down into more self-contained devices that generally come under the heading of channel in a box. As with many aspects of broadcast technology today, IT is the foundation of modern automation systems but with a specific application on top to make them applicable.

Among the earliest of the IT, channel in a box automation systems, was the Vector 3 VECTORBOX, which appeared in 1995. Today the company has a range of products, including units for news, and also works in partnership with French automation specialist Dalet Digital Media Systems. Another pioneer of the IT approach is OASYS (the trading name of On Air >

GLOSSARY

Play-out is part of the transmission chain in broadcasting. The term refers to the initial stage in the process as programmes are sent from a broadcast centre for distribution to a variety of outlets, including traditional style transmitters for digital terrestrial television (DTT), satellite uplinks, cable head-ends and, increasingly, new platforms based on Internet streaming to smartphones, tablets, and home computers. Automated equipment is now used to either route live programmes or trigger recorded material for distribution. This was once based largely on hardware and while big enterprise systems continue to be used for large-scale channels and broadcasters, IT-based software units are now being installed, particularly for lower budget transmission projects. In essence automation is a platform to control multiple devices to distribute material.





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Stuart Bruce, Future Music Magazine

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Huw Price, MusicTech Magazine

AudioTechnology
THE MAGAZINE FOR SOUND ENGINEERS & RECORDING MUSICIANS

SC205

"[...] I've had a pair of SC205s set up beside my usual Near fields and I've found them to be easy to listen to with a neutral tone that doesn't wear your ears out during long sessions..."

Due to their size the SC205s will probably be best suited to home/project studios but they could also be used by professional studios in small rooms, as part of surround or mobile setups, or for music playback installations."

Mark Woods, AudioTechnology Magazine

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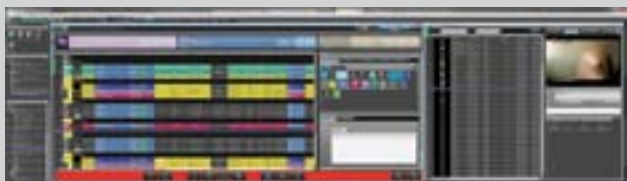
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MusicWeek

Pebble Beach Stingray

Channel in a box play-out and ingest system

www.pebble.tv



Key Features:

- Available in dedicated StingrayTX and StingrayIN configurations for Payout and Ingest
- Optimised, easy to operate UI available in multiple language variants
- Powerful Flash graphics creation and playback
- StingrayTX payout feature set matches functionality of enterprise automation
- Speed and ease of deployment
- Sophisticated redundancy options
- StingrayIN delivers fully featured comprehensive Ingest solution
- Scalable system architecture with near to linear expansion costs
- Client server architecture enables multi-channel control from each operator position

Stingray is based on established Pebble Beach Systems technology and is able to handle from

one to over 100 channels. It has a scalable system architecture and features an intuitive user interface.

Pebble Beach Systems developed the system in response to customer demand for lower cost channel in a box technology where there is no need for automatic control of third party devices. The system is based on 64-bit technology, with each system being fully Unicode compliant for different languages.

Stingray's client server design allows multi-channel control from a single operator position, with multiple timelines for efficient channel management and the ability to fully monitor play-out and ingest. Stingray channels are available for either play-out or ingest applications, with any combination of the two being housed in the standard Stingray frame, which has two inputs and two outputs.



> Systems), which is largely in the linear play-out market. The company's flagship product is the OASYS Player, which can be tailored for multi-channel operation, local insert work, or is able to run as a channel in a box through control software.

Some enterprise system manufacturers have reacted to these developments with their own IT-based offerings. Pebble Beach Systems produces both the channel in a box Dolphin product and the more recent lower cost Stingray; Snell has taken the basis of its Morpheus automation and combined that with DVE (digital video effects) units, routing and audio processing to create the Integrated Content Engine (ICE); while Miranda has extended the scope of the iTX into fully software-based environments.

Next month's Video Guide will examine further the business of channel delivery. **TM**

"Broadcasters like the BBC and ITV need to be able to break into schedules to react to breaking news stories and other fast moving events."

TECHNOLOGY NEWS BT Sport Red Bee Media

Distribution, media management, and branding specialist Red Bee Media has won the contract to play-out BT's new live sports channels. The BT Sport services are due to launch in SD and HD during the summer over satellite and fibre broadband into both homes and venues including pubs and clubs across the UK.

Red Bee Media has already worked on the station branding for BT Sport, including its logo, and now will handle all play-out and channel and media management for the service from its broadcast centre in west London.

Grant Best, Senior Channel Executive Producer with BT Sport, comments, "It's vitally important that we have complete confidence in our ability to deliver the amazing live sports coverage we'll be offering to customers of BT Sport. We chose Red Bee Media because of its impressive expertise in supporting this type of live event broadcasting."

Patrick Tillieux, Chief Executive Officer of Red Bee Media, added, "We are delighted to be chosen by BT to provide these critical services for the eagerly awaited BT Sport channels. This is a significant win for Red Bee Media, and is testament both to our excellent

track record in delivering high quality, reliable, and cost effective media distribution solutions, and our expertise and experience in managing the demanding nature of high-profile live events and sports programming."

BT Sport will broadcast 24 hours a day, and has signed up a roster of top-flight sports as part of its offering. This includes 38 live football matches a season from the Barclays Premier League, 69 live rugby union games in the Aviva Premiership, as well as 800 hours of live tennis in association with the Women's Tennis Association. All broadcasts and presentation will come through BT Sport's new broadcast centre, currently being installed in the iCITY development at the Queen Elizabeth Olympic Park in east London.

"It's vitally important that we have complete confidence in our ability to deliver the amazing live sports coverage we'll be offering to customers of BT Sport."



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The Wicker Man

KEVIN HILTON

May: The month that for Pagans and Wiccans marks the rebirth of the Sun and the death of Winter, ushering in Spring and new life. This belief is at the heart of *The Wicker Man* (1973), although, as with so much about this classic British horror film, it is subverted as the filmmakers toy with the audience and their expectations. A good deal of this misdirection and trickery comes through the loudspeakers as sweetly – if often bawdy – pastoral songs drown out the sounds of nature.

The writer of *The Wicker Man*, playwright Anthony Shaffer, had come to prominence with a number of stage productions, including *Sleuth*, which relied on game playing and twisting the truth. Shaffer decided to bring this approach to the horror genre, which he felt had come to rely on gore and shocks rather than unsettling the viewer by undermining their sense of reality.

Teaming up with Producer Peter Snell, Director Robin Hardy, and Christopher Lee as the bankable star, Shaffer dug into Britain's pagan history to create a society based on beliefs that would be at odds with modern, God-fearing life in the early 1970s, but which would appeal to the primal nature that lurks in everyone. The series of events that shake a man's view of his life begin with the reported disappearance of a young

girl, Rowan Morrison, on the remote island of Summerisle off the west coast of Scotland.

Upright Sergeant Howie (Edward Woodward) is duly despatched by the West Highland Police to investigate and sets off in a seaplane to reach the isolated community,

which is famous for its fruit and vegetables despite being so far north. Folk songs play under the credits as the plane flies along the coast; the traditionally-based *Corn Rigs*, set to music by Paul Giovanni, evokes the bucolic character of Summerisle as an idyll that exists outside the consumer society of the mainland.

The engine noise of Howie's plane disturbs the peace of the harbour but, apart from some futile splutters towards the end of the film, it is not heard from again. The outsider's arrival brings a crowd of muttering old men down to the wharveside. In houses looking on to the bay sash windows are pulled down with a less than welcoming thud as people peer out to see what is happening.

Howie shows round a photograph of Rowan but no one knows her. Already frustrated, the police sergeant goes to the local pub and hotel, The Green Man Inn. Inside the locals are chattering away, with folk music playing over the top. This cacophony stops abruptly when Howie enters the bar. The islanders are superficially friendly but seem amused at the policeman's increasing irritation when they again state that there is no such person as Rowan on Summerisle.

After a terrible meal, most of which came out of a tin, Howie goes to bed but is driven into a sweat by the pub landlord's comely daughter Willow (Britt Ekland, whose speaking voice was dubbed by Scottish actor and jazz singer Annie Ross), who sings and dances (naked, unbeknownst to the virginal copper) in the room next to his. This incident, together with other displays of unbridled passion on the island, convince Howie he is in the midst of lunatic heathens.

The leader of the island, Lord Summerisle (Lee, enjoying himself hugely in his favourite film), explains that his people have chosen a different path that works for them. Taking His Lordship's advice not to be around for the May Day revels Howie gets back to his plane, planning to return with support, only to find it will not start.

The Proof In The Plot

Now events take an even more sinister turn. Howie breaks into the shop of the local chemist/photographer; sparse de-tuning notes play on the sound-track, denoting the upholder of the law has taken matters into his own hands. Here he finds photographic proof of Rowan's existence, together with the fact that last year's harvest failed. He then barges round the town searching houses, all the time followed by the hobby horse of the upcoming May Day procession snapping its wooden jaws menacingly.

Howie joins the festivities disguised as Punch and processes with the islanders, led by Lord Summerisle, to the beach. The power of nature finally breaks into the manmade construct of island. The waves crashing and gulls crying come as a relief; the lack of natural sounds up to this point is deeply unsettling but gives the film an unnatural feel, underlining the strangeness of the setting.

Suddenly Rowan is revealed, ready, as Howie believes, to be sacrificed in a bid to improve next year's harvest. The policeman grabs the girl and, accompanied by unexpected electric guitar chase music, makes a break for it, only to discover the whole thing has been an elaborate ruse to bring the "right kind of adult" to the island as an offering to appease the gods.

As Howie keeps his date with destiny in the giant Wicker Man, he sings hymns to bolster his spirits while the islanders stand below lustily singing *Summer is A-Come In*. Flames roar and jump up, leaving the sergeant alone to his fate, apart from the animals also being sacrificed, which bleat and whimper around him.

With the Wicker Man consumed by fire its head collapses, revealing the setting sun on the horizon. Wind noise merges with solemn brass music, leaving the audience wondering if the next harvest will be successful, and if not, whether Howie's prophecy that only a sacrifice of Lord Summerisle himself will do. **AVG**

"The waves crashing and gulls crying come as a relief; the lack of natural sounds up to this point is deeply unsettling but gives the film an unnatural feel, underlining the strangeness of the setting."

Kevin Hilton



"I was suspect at first, but after a few minutes with the Recoils I realized how much difference they made. They work."
 ~ Al Schmitt
 (Barbra Streisand, Ray Charles, Quincy Jones, Madonna)



"With the Recoils I immediately noticed improvements in low end clarity—to the point that I no longer needed a sub. Incredibly high frequency detail and image localization also improved."
 ~ Chuck Ainlay
 (Dixie Chicks, Vince Gill, Lyle Lovett, Sheryl Crow, Dixie Chicks)



"The Recoil Stabilizers are great! A huge difference from regular foam pads. They sound more stationary and connected. I'm quite happy with them."
 ~ Elliot Scheiner
 (Steely Dan, Fleetwood Mac, Sting, The Eagles, Queen, REM)



"My nearfields sound better on the Recoil Stabilizers. It's a great product."
 ~ Daniel Landis
 (Peter Gabriel, U2, Bob Dylan, Emmylou Harris, Robbie Robertson)



"With Recoils, when I listen to my recordings elsewhere, the results are more like what I hear when I record."
 ~ Ed Cherney
 (The Rolling Stones, Bonnie Raitt, Jackson Browne, Eric Clapton)



"With Recoils the low-end is more defined and I hear fundamentals that I never thought were there. Recoils brought new life to my nearfields—they have never sounded so good!"
 ~ Bill VomDick
 (Bola Fleck, Alison Krauss)



"It really is amazing what a simple little thing like the Recoil Stabilizers can do to a system. Suddenly everything got clearer, punchier and more solid."
 ~ Frank Filpeli
 (James Taylor, Foreigner, The Beatles, Elton John)



"The Recoils cleared up a cloudiness in the bass and mid bass that I had been battling in my studio. This is an affordable and very effective problem solving product. I love these things!"
 ~ Ross Hogarth
 (Ziggy Marley, Melissa Etheridge, Kiki Mo', Jowll)



"Using the Recoil Stabilizers gave a noticeable improvement in sound, the bottom end is tighter and mixes sound more defined."
 ~ Dave Stewart
 (Eurythmics, Stevie Nicks, Tom Petty, Bono, Mick Jagger, Jon Bon Jovi)



"I immediately noticed a huge improvement in the spaciousness of the sound field in my mixes. I love my Recoils... from now on, I'm not going to do a mix without them!"
 ~ Bruce Swedien
 (Quincy Jones, Michael Jackson, Paul McCartney)

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Your loudspeaker works like a piston, constantly pushing and pulling air as the cone is thrust back and forth. The same energy that pushes against the air also vibrates into the desk, causing resonance. This 'comb filtering' effect makes it difficult to mix as it amplifies some frequencies and cancels out others.

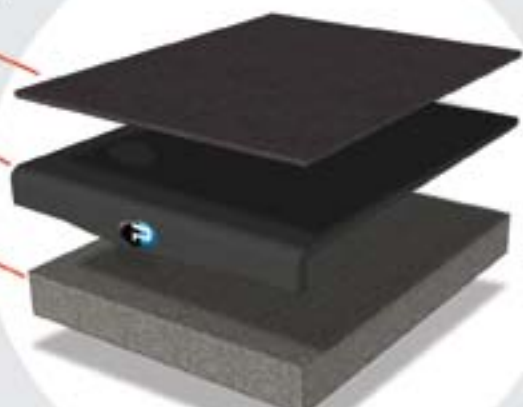
Some would say "just isolate the loudspeaker from the desk with a foam pad" but by doing so, you introduce a new problem—your speaker is now swaying back and forth unhindered on the foam, just as Newton said it would. Energy that could be producing a crisp kick or accurate bass is dissipated into the foam and is lost.



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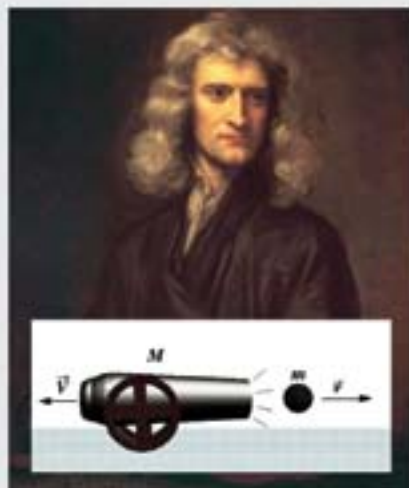
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Black Kettle (Keeley Bumford, Kailynn West) recording at home with "Monkey"



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